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January 29, 2015

FEB - 3 2015

Director Air, Pesticides and Toxics
US EPA Region 6
1445 Ross Avenue
Dallas, Texas 75202-2733

Air Toxics & Inspection
Coordination Branch
6EN-A

**RE: Notification of Compliance Status
Sterigenics' Santa Teresa, NM Facility**

Dear Sir:

This Notification of Compliance Status is being sent pursuant to 40 CFR 63.9(h) for Sterigenics' Santa Teresa, New Mexico facility. The facility is subject to the MACT emission standards in Section 63.362. On December 3, 2014 the facility's catalytic oxidizer system underwent performance testing. The results from that testing are contained herein.

Facility Name:

Sterigenics U.S., LLC – Santa Teresa Facility
2400 Airport Road
Santa Teresa, NM 88008

Method(s) Used to Determine Compliance - Section 63.9(h)(A)

Performance testing of the facility's catalytic oxidizer was conducted on December 3, 2014 in accordance with the test methods stated in 40 CFR 63.365 for Ethylene Oxide Sterilization Facilities.

Performance Test Results - Section 63.9(h)(B)

The catalytic oxidizer system (Donaldson abator) demonstrated an average efficiency of 99.60% for controlling ethylene oxide emissions from the Aeration Room and 99.67% efficiency for controlling ethylene oxide emissions from the back vents on Chambers 8, 9, 10, and 13, versus the 99.0% control standard in Section 63.362.

Methods to be Used for Determining Continued Compliance Section 63.9(h)(C)

The facility assures continued compliance with Section 63.362 standards by measuring / recording scrubber system pH and liquor tank level on a daily and weekly basis, respectively, and catalytic oxidizer bed temperature on a continuous basis.

Quantity of Ethylene Oxide Emitted During Reporting Period - Section 63.9(h)(D)

The Santa Teresa facility used approximately 1,010,601 pounds of ethylene oxide during all of 2014. Approximately 95% of that amount (960,071 pounds) is emitted from sterilization chamber vents (via vacuum pumps) to the Ceilcote wet scrubber system. Using the 99.954% control efficiency from the most recent Ceilcote system performance test conducted on December 12, 2012, calculated process emissions are approximately 442 pounds per year. Approximately 4% of the ethylene oxide (40,424 pounds) is vented from the facility's aeration rooms/cells and treated by the catalytic oxidizer emission control system. Using the 99.60% demonstrated control efficiency achieved during the December 3rd test, treated emissions from the aeration rooms total approximately 160 pounds annually. Prior to October 2013, backvent process emissions representing approximately 1% of the facility's total ethylene oxide usage (or 10,106 pounds), were not required to be controlled. The facility's NSR air permit issued June 2013 requires backvent emission on the facility's four largest chambers to be controlled. Using the 99.67% demonstrated control efficiency achieved during the December 3rd test on the four largest chambers,



calculated backvent emissions for 2014 totaled 4,655. In total, the facility's ethylene oxide emissions during 2014 were 5,257 pounds (2.6 tons).

Analysis Demonstrating Whether Source is a Major Source - Section 63.9(h)(E)

Based on the above emission analysis, the facility emits less than 10 tons/year of ethylene oxide and is an area source.

Description of Air Pollution Control Device & Control Efficiency for Facility's Emission Points - Section 63.9(h)(F)

A wet scrubber emission control device is used for controlling emissions from the facility's sterilization vents/vacuum pumps. The Ceilcote scrubber system demonstrated a control efficiency of 99.954% on December 12, 2012. Process emissions from the facility's aeration rooms/cells and 4 of the facility's thirteen sterilization chamber backvents are controlled by a catalytic oxidizer operating at a 99.60% and 99.67% performance efficiencies respectively. The facility's other chamber backvent emissions are not controlled.

Statement by Owner as to Whether the Facility Has Complied with the Relevant Standard - Section 63.9(h)(G)

To the best of our knowledge, the Santa Teresa facility has operated in compliance with the applicable standards in 40 CFR Part 63, Subpart O.

Certification Statement:

To the best of the undersigned's knowledge, information and belief formed after reasonable inquiry, the information submitted in this notification of the compliance status for Sterigenics' Santa Teresa, New Mexico facility is true, accurate, and complete.

KATHOFFMAN

Signature

Kathleen Hoffman

Printed Name

Senior Vice President - Global EHS

Title

29-Jun-2015

Date

If you should need further information, please contact Mrs. Laura Hartman at (630) 928-1724 or LHartman@Sterigenics.com.

Sincerely,

Laura Hartman
EHS Manager

Cc: Manager, Compliance and Enforcement Section - New Mexico AQB
Mr. Steve Ortiz - Santa Teresa General Manager

**REPORT OF
AIR POLLUTION SOURCE TESTING
OF AN ETHYLENE OXIDE EMISSION-CONTROL SYSTEM
OPERATED BY STERIGENICS U.S., LLC.
IN SANTA TERESA, NEW MEXICO
ON DECEMBER 3, 2014**

Submitted to:

**NEW MEXICO ENVIRONMENT DEPARTMENT
Air Quality Bureau
1301 Siler Road, Building B
Santa Fe, New Mexico 87507**

Submitted by:

**STERIGENICS U.S., LLC.
2400 Airport Road
Santa Teresa, New Mexico 88008**

NSR Permit No. 0733-M15

Prepared by:

**ECSi
PO Box 848
San Clemente, California 92674-0848**

Prepared on:

December 19, 2014

ECSi

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PROPOSED TEST DATE

December 3, 2014

REGULATORY AGENCY

NEW MEXICO ENVIRONMENT DEPARTMENT
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1.0 INTRODUCTION

On Wednesday, December 3, 2014, ECSi performed air pollution source testing of an ethylene oxide (EtO) emission-control system operated by Sterigenics U.S., LLC. in Santa Teresa, New Mexico. The control device tested was a Donaldson Abator catalytic oxidizer, which is currently used to control emissions from two aeration rooms, three aeration cells, and four sterilization chamber backvents. The purpose of the testing program was to evaluate continued compliance with EPA requirements under the current National Emissions Standards for Hazardous Air Pollutants (NESHAP), Subpart O - Ethylene Oxide Sterilization Facilities, and with requirements in the facility's NSR Permit No. 0733-M15 issued by the New Mexico Environment Department (NMED).

2.0 EQUIPMENT

The EtO gas-sterilization system is comprised of thirteen commercial sterilizers, all discharging through dry screw or liquid-ring vacuum pumps to a packed-tower Ceilcote acid scrubber emission control device. Two aeration rooms, three aeration cells and four sterilization chamber backvents are all discharged to a Donaldson Abator catalytic oxidizer emission-control device. The gas-sterilization and emission-control equipment consists of the following:

- Thirteen Gas Sterilizers, each comprised of a steam-heated sterilization chamber (varying in size from 13-30 pallet capacity), a dry screw or liquid ring recirculating vacuum pump chamber evacuation system ("chamber vacuum vent"), and a backdraft valve ("chamber backvent");
- Two aeration rooms and three aeration cells, each comprised of a heated aeration chamber and a chamber exhaust system.

Sterilizer vacuum pump emissions are controlled by:

- One packed-tower Ceilcote chemical scrubber, equipped with a packed reaction/interface column, a scrubber fluid recirculation system, a scrubber fluid reaction/storage tank, and a dedicated blower exhaust system.

Aeration room/aeration cells and sterilizer backvent (Sterilizers 8, 9, 10 and 13) emissions are controlled by:

- One Donaldson EtO Abator catalytic oxidizer, 20,000 SCFM, equipped with a prefilter, a gas-fired heater, an exhaust gas heat exchanger, a reactive catalyst bed, and an exhaust blower.

3.0 TESTING

EtO source testing was conducted in accordance with the procedures outlined in USEPA CFR40, Part 63.365(d) and Method 18 in 40 CFR Part 60, Appendix A. EtO emissions monitoring for each test run was conducted simultaneously at the inlet and outlet of the catalytic oxidizer during a one-hour interval of the 24-hour aeration process. A total of three one-hour aeration test runs were performed. Testing of the backvent process consisted of a 15-minute test run.

During backvent and aeration testing, EtO emissions at the inlet and the outlet of the catalytic oxidizer were determined using direct source sample injection into the gas chromatograph (GC). All backvent and aeration testing was performed using freshly sterilized product. The testing program was conducted in accordance with the procedures outlined in the following sections.

4.0 RULE/COMPLIANCE REQUIREMENTS

The facility's Donaldson Abator catalytic oxidizer system was tested to determine compliance with the current federal EPA National Emissions Standards for Hazardous Air Pollutants (NESHAP) in 40 CFR Part 63, Subpart O and the facility's NSR permit. Applicable provisions in the NESHAP standard include Sections 63.362(d) and 63.363(b)(4)(i). Specifically, the current testing was performed to demonstrate continued compliance with the following requirements:

- The emissions from the aeration process must be discharged to control equipment with an EtO emission-reduction efficiency of at least 99.0% by weight. {Section 63.362(d)}
- The emissions from the backvents of Sterilizers 8, 9, 10, and 13 must be discharged to the catalytic oxidizer, CD-3, with an EtO emission-reduction efficiency of at least 99.0%. {NSR Permit Section A803 A.}

Testing is required to demonstrate compliance with these requirements. Source testing of the emission-control device is required annually, in accordance with Federal EPA and NMED requirements.

5.0 TEST METHOD REFERENCE

5.1 INTRODUCTION

The testing procedures outlined herein are based on USEPA source-sampling methods. EtO control efficiency and mass-emissions testing for the aeration process was conducted following USEPA CFR40, Part 63.365(d) requirements. EtO emissions monitoring for each test run was conducted simultaneously at the inlet and outlet of the catalytic oxidizer during a one-hour test interval of the 24-hour aeration process. A total of three (3) - one-hour test runs were performed of the aeration process.

EPA's Subpart O standards currently do not regulate backvent emissions from ethylene oxide sterilization facilities. However the testing procedures in Part 63.365(d) are equally suitable for testing backvent process emissions and were used for this testing, except the sampling duration was limited by the duration of the backvent emissions cycle, which is approximately 15 minutes. One 15-minute test run of the backvent process is included in the test results.

During backvent and aeration testing, EtO emissions at the inlet and the outlet of the catalytic oxidizer were determined using direct source sample injection into the gas chromatograph (GC). All backvent and aeration testing was performed using freshly sterilized product.

Operation and documentation of process conditions were performed by personnel from Sterigenics using existing monitoring instruments installed by the manufacturer on the equipment to be tested. In accordance with the procedures established in USEPA CFR40, Part 63, Subpart O, Section 63.363(b)(3), the following parameter was recorded: catalyst bed operating temperature. Process condition data is recorded in Tables 1 and 2.

5.2 VOLUMETRIC FLOW MEASUREMENT

Exhaust gas flow at the outlet of the catalytic oxidizer was determined by EPA Method 2C using a standard pitot tube and an inclined-oil manometer. Sampling ports were installed in accordance with EPA Method 1, and were located far enough from any flow disturbances to permit accurate flow measurement.

Temperature measurements were obtained from a type K thermocouple and thermometer attached to the sampling probe. Exhaust gas composition was assumed to be air and small amounts of water vapor. Water vapor was negligible, at about 3 percent.

5.3 CONTROL EFFICIENCY AND MASS EMISSIONS MEASUREMENT

During backvent and aeration testing, EtO emissions at the inlet and outlet of the catalytic oxidizer were determined using direct source sample injection into the GC. The mass of EtO emitted to the inlet and from the outlet was determined using the equation shown below in Section 5.9. Mass-mass control-efficiency of EtO during aeration was calculated by comparing the mass of EtO vented to the system inlet to the mass of EtO vented from the system outlet.

During backvent and aeration testing, vented gas was analyzed by an SRI, Model 8610, portable gas chromatograph (GC), equipped with the following: dual, heated sample loops and injectors; dual columns; and dual detectors. A flame ionization detector (FID) was used to quantify inlet EtO emissions, and a photoionization detector (PID) was used to quantify low-level EtO emissions at the emission-control device outlet.

5.4 SAMPLE TRANSPORT

Source gas was pumped to the GC at approximately 1000 cubic centimeters per minute (cc/min) from the sampling ports through two lengths of Teflon® sample line, each with a nominal volume of approximately 75 cubic centimeters (cc) and an outer diameter of 0.25 inch. At the inlet, the sampling port was located in the aeration discharge duct, upstream of the oxidizer. At the outlet of the catalytic oxidizer, sampling ports were located in the exhaust stack downstream of the catalyst bed.

5.5 GC INJECTION

Source-gas samples were then injected into the GC which was equipped with two heated sampling loops, each containing a volume of approximately 2cc and maintained at 100 degrees Celsius (C). Injections occurred at approximately one-minute intervals during backvent testing, and at approximately five-minute intervals during aeration testing. Helium was the carrier gas for both the FID and PID.

5.6 GC CONDITIONS

The packed columns for the GC were both operated at 80 degrees C. The columns were stainless steel, 6 feet long, 0.125 inch outer diameter, packed with 1 percent SP-1000 on 60/80 mesh Carbopack B.

During the analysis, the FID was operated at 250 degrees C. The support gases for the FID were helium (99.999% pure), hydrogen (99.995% pure) and air (99.9999% pure). Any unused sample gas was vented from the GC system back to the inlet of the control device being tested.

5.7 CALIBRATION STANDARDS

The FID was calibrated for mid-range part-per-million-by-volume (ppmv) level analysis using gas proportions similar to the following:

- 1) 1,000 ppmv EtO, balance nitrogen
- 2) 100 ppmv EtO, balance nitrogen
- 3) 50 ppmv EtO, balance nitrogen (audit gas)
- 4) 10 ppmv EtO, balance nitrogen
- 5) 1 ppmv EtO, balance nitrogen

The PID was calibrated for low-range ppmv level analyses using gas proportions similar to the following:

- 1) 100 ppmv EtO, balance nitrogen
- 2) 50 ppmv EtO, balance nitrogen (audit gas)
- 3) 10 ppmv EtO, balance nitrogen
- 4) 1 ppmv EtO, balance nitrogen

Each of these calibration standards was in a separate, certified manufacturer's cylinder. Copies of the calibration gas laboratory certificates are attached as Appendix G.

5.8 SAMPLING DURATION

Backvent testing consisted of a one 15-minute test run, which encompassed the entire duration of a single cycle of the backvent process. Since aeration is a 24-hour process at this facility, with constant discharge flow from the aeration chambers to the Donaldson Abator emission-control system, aeration testing

consisted of three (3), 1-hour test runs. Each test run was performed with freshly sterilized product in the sterilization chambers and/or aeration rooms.

5.9 CONTROL-EFFICIENCY/MASS-EMISSIONS CALCULATIONS

Mass emissions of EtO during backvent and aeration were calculated using the following equation:

$$\text{MassRate} = (\text{VolFlow})(\text{MolWt})(\text{ppmv EtO}/10^6)/(\text{MolVol})$$

Where:

MassRate = EtO mass flow rate, pounds per minute

VolFlow = Corrected volumetric flow rate, standard cubic feet per minute at 68 degrees F

MolWt = 44.05 pounds EtO per pound mole

ppmv EtO = EtO concentration, parts per million by volume

10^6 = Conversion factor, ppmv per "cubic foot per cubic foot"

MolVol = 385.32 cubic feet per pound mole at one atmosphere and 68 degrees F

Mass-mass control efficiency of EtO was calculated for backvent and aeration. Results of the control-efficiency testing are presented in Table 1.

5.10 LEAK TESTING

Testing for EtO leaks was conducted during the exposure and chamber evacuation phases of the sterilization and exhaust cycles of the sterilizer. These conditions represent maximum sterilant gas mass flow through the system.

EtO leak testing was performed using a Bacharach EO Leakator, Part Number 19-7057, Gas Leak Detector, equipped with a metal-oxide semi-conductor sensor, an audible signal, and a visual display. The lower detection limit of the instrument is less than the leak definition specified for EtO. This leak definition is 10 ppm EtO for sterilant gas composed of 100 percent EtO.

EtO concentration was measured one centimeter from the surface of all accessible components of the sterilizer and emission-control device that are potential sources of EtO leakage. Each component found to be leaking was identified and tagged. The date and the results of the EtO measurement for each leaking component were entered on that component's tag. The leak test data is summarized in Section 8.0 and in Table 2.

6.0 TEST SCENARIO

Backvent and aeration testing was performed during normal process load conditions. One backvent test run and three aeration test runs were conducted in series to verify the performance of the emission-control device. The testing schedule was as follows:

- 1) Testing equipment was set up and calibrated.
- 2) Backvent Test Run #1 was conducted with freshly sterilized product in sterilization chamber. Sampling was performed at the inlet and the outlet of the catalytic oxidizer.
- 3) Aeration Test Run #1 was conducted with freshly sterilized product in aeration. Sampling was performed at the inlet and the outlet of the catalytic oxidizer.
- 4) Aeration Test Run #2 was conducted with freshly sterilized product in aeration. Sampling was performed at the inlet and the outlet of the catalytic oxidizer.
- 5) Aeration Test Run #3 was conducted with freshly sterilized product in aeration. Sampling was performed at the inlet and the outlet of the catalytic oxidizer.
- 6) Post calibration check was performed, testing equipment was packed.

7.0 QA/QC

7.1 FIELD TESTING QUALITY ASSURANCE

At the beginning of the test, the sampling system was leak checked at a vacuum of 15 inches of mercury. The sampling system was considered leak free when the flow indicated by the rotameters fell to zero.

At the beginning of the test, a system blank was analyzed to ensure that the sampling system was free of EtO. Ambient air was introduced at the end of the heated sampling line and drawn through the sampling system line to the GC for analysis. The resulting chromatogram also provided a background level for non-EtO components (i.e. ambient air, carbon dioxide, water vapor) which are present in the source gas stream due to the ambient dilution air which is drawn into the emission-control device, and due to the destruction of EtO by the emission-control device which produces carbon dioxide and water vapor. This chromatogram, designated AMB, is included with the calibration data in Appendix A.

7.2 CALIBRATION PROCEDURES

The GC system was calibrated at the beginning and conclusion of each day's testing. Using the Peaksimple II analytical software, a point-to-point calibration curve was constructed for each detector. A gas cylinder of similar composition as the calibration gases, but certified by a separate supplier, was used to verify calibration gas composition and GC performance.

All calibration gases and support gases used were of the highest purity and quality available. A copy of the laboratory certification for each calibration gas is attached as Appendix G.

8.0 TEST RESULTS

The catalytic oxidizer was found to have an average EtO control efficiency of 99.67% for the backvent process, and 99.60% for the aeration process. During backvent and aeration testing the catalytic oxidizer was operated at 280 degrees F (i.e., bed outlet temperature). In accordance with state and federal requirements, backvent and aeration discharge streams must be vented to control equipment with an EtO emission-reduction efficiency of at least 99 percent by weight. The facility's Donaldson Abator catalytic oxidizer met this requirement. All thirteen sterilizers were also tested for EtO leaks and found to be leak free.

The test results are summarized in Tables 1, 2 and 3. These tables include results for EtO control efficiency of the emission-control device, and for the leak testing of the sterilizers. Chromatograms and chromatographic supporting data are attached as Appendices A through E. Copies of field data and calculation worksheets are attached as Appendix F.

TABLES

TABLE 1
ETHYLENE OXIDE CONTROL EFFICIENCY - BACKVENT
OF AN ETHYLENE OXIDE EMISSION CONTROL DEVICE
OPERATED BY STERIGENICS U.S., LLC.
IN SANTA TERESA, NEW MEXICO
ON DECEMBER 3, 2014

<u>CYCLE</u> <u>PHASE</u>	<u>INJECTION</u> <u>TIME</u>	<u>INLET ETO</u> <u>CONC. (PPM)(1)</u>	<u>OUTLET ETO</u> <u>CONC. (PPM)(2)</u>	<u>ETO CONTROL</u> <u>EFFICIENCY</u>
Backvent(3)	848	218	0.83	99.6193
Backvent	849	89.7	0.52	99.4203
Backvent	850	55.3	0.19	99.6564
Backvent	851	50.2	0.20	99.6016
Backvent	853	48.7	0.10	99.7947
Backvent	854	47.6	0.30	99.3697
Backvent	855	46.9	0.03	99.9360
Backvent	856	46.2	0.11	99.7619
Backvent	858	45.9	0.06	99.8693
Backvent	859	45.9	0.10	99.7821
Backvent	900	45.5	0.22	99.5165
Backvent	901	45.9	0.13	99.7168
Backvent	902	<u>45.5</u>	<u>0.16</u>	<u>99.6484</u>
TIME-WEIGHTED AVERAGE:		63.9	0.2269	99.6687
NMED REQUIRED CONTROL EFFICIENCY:				99%

Notes:

- (1) - PPM = parts per million by volume
- (2) - 0.01 ppm is the quantification limit for the detector used at the outlet.
- (3) - The backvent phase test run started at 8:47, ended at 9:02.
- (4) - The average catalyst bed temperature recorded during the test run was 280 degrees F.

TABLE 2
ETHYLENE OXIDE CONTROL EFFICIENCY - AERATION
OF AN ETHYLENE OXIDE EMISSION CONTROL DEVICE
OPERATED BY STERIGENICS U.S., LLC.
IN SANTA TERESA, NEW MEXICO
ON DECEMBER 3, 2014

<u>RUN NUMBER</u>	<u>INJECTION TIME</u>	<u>INLET ETO CONC. (PPM)(1)</u>	<u>OUTLET ETO CONC. (PPM)(2)</u>	<u>ETO CONTROL EFFICIENCY</u>
1(3)	908	44.5	0.26	99.4157
1	913	43.7	0.13	99.7025
1	918	43.1	0.13	99.6984
1	923	42.5	0.19	99.5529
1	928	42.9	0.27	99.3706
1	933	43.7	0.12	99.7254
1	938	40.9	0.28	99.3154
1	943	42.5	0.21	99.5059
1	948	43.4	0.20	99.5392
1	953	44.6	0.24	99.4619
1	958	45.6	0.21	99.5395
1	1003	46.8	0.14	99.7009
2(4)	1008	47.3	0.15	99.6829
2	1013	47.2	0.24	99.4915
2	1018	46.3	0.18	99.6112
2	1023	46.4	0.16	99.6552
2	1028	51.8	0.17	99.6718
2	1033	51.8	0.20	99.6139
2	1038	52.2	0.23	99.5594
2	1043	51.5	0.19	99.6311
2	1048	52.3	0.20	99.6176
2	1053	53.3	0.19	99.6435
2	1058	53.5	0.13	99.7570
2	1103	53.9	0.17	99.6846
3(5)	1108	54.5	0.12	99.7798
3	1113	53.2	0.22	99.5865
3	1118	53.6	0.20	99.6269
3	1123	53.8	0.16	99.7026
3	1128	53.8	0.27	99.4981
3	1133	54.0	0.25	99.5370
3	1138	53.2	0.22	99.5865
3	1143	53.2	0.24	99.5489
3	1148	53.2	0.14	99.7368
3	1153	52.1	0.25	99.5202
3	1158	51.6	0.18	99.6512
3	1203	<u>52.7</u>	<u>0.11</u>	<u>99.7913</u>
TIME-WEIGHTED AVERAGE:		49.18	0.1931	99.6032

NMED REQUIRED CONTROL EFFICIENCY: 99%

Notes:

- (1) - PPM = parts per million by volume
- (2) - 0.01 ppm is the quantification limit for the detector used at the outlet.
- (3) - Aeration Phase Test Run #1 started at 9:05, ended at 10:05.
- (4) - Aeration Phase Test Run #2 started at 10:05, ended at 11:05.
- (5) - Aeration Phase Test Run #3 started at 11:05, ended at 12:05.
- (6) - During aeration testing, the average recorded catalyst bed temperature was 280 deg F

ECSi



170002 11 0000 7254/

RECEIVED
US EPA, DALLAS, TX
ASSOCIATE DIRECTOR

16 FEB 12 AM 10:47

COMPLIANCE ASSURANCE
& ENFORCEMENT DIV.

February 10, 2016

Director Air, Pesticides and Toxics
US EPA Region 6
1445 Ross Avenue
Dallas, Texas 75202-2733

RE: Notification of Compliance Status
Sterigenics' Santa Teresa, NM Facility

A1/A1/CO

Dear Sir:

This Notification of Compliance Status is being sent pursuant to 40 CFR 63.9(h) for Sterigenics' Santa Teresa, New Mexico facility. The facility is subject to the MACT emission standards in Section 63.362. On December 18, 2015 the facility's catalytic oxidizer system underwent performance testing. The results from that testing are contained herein.

Facility Name:

Sterigenics U.S., LLC – Santa Teresa Facility
2400 Airport Road
Santa Teresa, NM 88008

Method(s) Used to Determine Compliance - Section 63.9(h)(A)

Performance testing of the facility's catalytic oxidizer was conducted on December 18, 2015 in accordance with the test methods stated in 40 CFR 63.365 for Ethylene Oxide Sterilization Facilities.

Performance Test Results - Section 63.9(h)(B)

The catalytic oxidizer system (Donaldson abator) demonstrated an average control efficiency of 99.978% for ethylene oxide emissions from both the Aeration Room and the back vents, versus the 99.0% control standard in Section 63.362.

Methods to be Used for Determining Continued Compliance Section 63.9(h)(C)

The facility assures continued compliance with Section 63.362 standards by measuring / recording scrubber system pH and liquor tank level on a daily and weekly basis, respectively, and catalytic oxidizer bed temperature on a continuous basis.

Quantity of Ethylene Oxide Emitted During Reporting Period - Section 63.9(h)(D)

The Santa Teresa facility controlled approximately 1,008,639 pounds of ethylene oxide during all of 2015. Approximately 95% of that amount (958,207 pounds) is emitted from sterilization chamber vents (via vacuum pumps) to the Ceilcote wet scrubber system. Using the 99.954% control efficiency from the most recent Ceilcote system performance test conducted on December 12, 2012, calculated process emissions are approximately 441 pounds per year. Approximately 4% of the ethylene oxide (40,346 pounds) is vented from the facility's aeration rooms/cells and treated by the catalytic oxidizer emission control system. Using the 99.978% demonstrated control efficiency achieved during the December 18th test, treated emissions from the aeration rooms total approximately 9 pounds annually. Backvent process emissions represent approximately 1% of the facility's total ethylene oxide usage (or 10,086 pounds). Prior to 2015, the backvent process emissions from 4 of the 13 chambers were controlled by the catalytic oxidizer. The facility's NSR air permit issued in December 2014 required backvent emissions on all of the facility's chambers to be routed to the catalytic oxidizer. Routing the remaining backvents was completed on January 11, 2105. Using the 99.978% demonstrated control efficiency achieved during the



December 18th test on the 4 backvents prior to January 11 and all backvents after January 11, calculated backvent emissions for 2015 totaled 17 pounds. In total, the facility had an estimated 467 pounds (0.2 tons) of ethylene oxide point source emissions during 2015.

Analysis Demonstrating Whether Source is a Major Source - Section 63.9(h)(E)

Based on the above emission analysis, the facility emits less than 10 tons/year of ethylene oxide and is an area source.

Description of Air Pollution Control Device & Control Efficiency for Facility's Emission Points - Section 63.9(h)(F)

A wet scrubber emission control device is used for controlling emissions from the facility's sterilization vents/vacuum pumps. The Ceilcote scrubber system demonstrated a control efficiency of 99.954% on December 12, 2012. Process emissions from the facility's aeration rooms/cells and the facility's thirteen sterilization chamber backvents are controlled by a catalytic oxidizer operating at a 99.978% performance efficiency.

Statement by Owner as to Whether the Facility Has Complied with the Relevant Standard - Section 63.9(h)(G)

To the best of our knowledge, the Santa Teresa facility has operated in compliance with the applicable standards in 40 CFR Part 63, Subpart O.

Certification Statement:

To the best of the undersigned's knowledge, information and belief formed after reasonable inquiry, the information submitted in this notification of the compliance status for Sterigenics' Santa Teresa, New Mexico facility is true, accurate, and complete.



Signature

Kathleen Hoffman

Printed Name

Senior Vice President - Global EHS

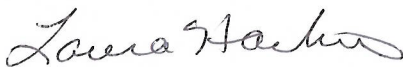
Title

11-Feb-2015

Date

If you should need further information, please contact Mrs. Laura Hartman at (630) 928-1724 or LHartman@Sterigenics.com.

Sincerely,



Laura Hartman
EHS Manager

Cc: Manager, Compliance and Enforcement Section -New Mexico AQB
Mr. Steve Ortiz - Santa Teresa General Manager



New Mexico Environment Department
Air Quality Bureau
Compliance and Enforcement Section
525 Camino de los Marquez, Suite 1
Santa Fe, NM 87505
Phone (505) 476-4300 Fax (505) 476-4375



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PLEASE NOTE: ® - Indicates required field

SECTION I - GENERAL COMPANY AND FACILITY INFORMATION

A. ® Company Name: Sterigenics U.S. LLC			D. ® Facility Name: Santa Teresa Facility		
B.1 ® Company Address: 2015 Spring Road, Ste 650			E.1 ® Facility Address: 2400 Airport Road		
B.2 ® City: Oak Brook	B.3 ® State: IL	B.4 ® Zip: 60523 ⁺	E.2 ® City: Santa Teresa	E.3 ® State: NM	E.4 ® Zip: 88008
C.1 ® Company Environmental Contact: Laura Hartman	C.2 ® Title: EHS Manager		F.1 ® Facility Contact: Steve Ortiz	F.2 ® Title: General Manager	
C.3 ® Phone Number: 630-928-1724	C.4 ® Fax Number: 847-855-6123		F.3 ® Phone Number: 575-589-9300	F.4 ® Fax Number: 575-589-9729	
C.5 ® Email Address: LHartman@Sterigenics.com			F.5 ® Email Address: SOrtiz@Sterigenics.com		
G. Responsible Official: (Title V only):		H. Title:	I. Phone Number:		J. Fax Number:
K. ® AI Number: 127-PRN2014001	L. Title V Permit Number:	M. Title V Permit Issue Date:	N. NSR Permit Number: 0733-M15-R1		O. NSR Permit Issue Date: 12/23/2014
P. Reporting Period: From: January 1, 2015 To: December 31, 2015					

SECTION II - TYPE OF SUBMITTAL (check one that applies)

A. <input type="checkbox"/>	Title V Annual Compliance Certification	Permit Condition(s):	Description:		
B. <input type="checkbox"/>	Title V Semi-annual Monitoring Report	Permit Condition(s):	Description:		
C. <input type="checkbox"/>	NSPS Requirement (40CFR60)	Regulation:	Section(s):	Description:	
D. <input checked="" type="checkbox"/>	MACT Requirement (40CFR63)	Regulation: Subpart A	Section(s): 63.9(h)	Description: Notification of Compliance Status Report	
E. <input type="checkbox"/>	NMAC Requirement (20.2.xx) or NESHAP Requirement (40CFR61)	Regulation:	Section(s):	Description:	
F. <input type="checkbox"/>	Permit or Notice of Intent (NOI) Requirement	Permit No. <input type="checkbox"/> : or NOI No. <input type="checkbox"/> :	Condition(s):	Description:	
G. <input type="checkbox"/>	Requirement of an Enforcement Action	NOV No. <input type="checkbox"/> : or SFO No. <input type="checkbox"/> : or CD No. <input type="checkbox"/> : or Other <input type="checkbox"/> :	Section(s):	Description:	

SECTION IV - CERTIFICATION

After reasonable inquiry, I <u>Kathleen Hoffman</u> certify that the information in this submittal is true, accurate and complete. (name of reporting official)				
® Signature of Reporting Official: <u>Kathleen Hoffman</u>		® Title: SR. VP - Global EHS	® Date: 2/10/2016	® Responsible Official for Title V? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Reviewed By: _____

Date Reviewed: _____



AI/AI/CO

110000472541

NS41 w/6
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JUL 23 2014

Air/Toxics & Inspection
Coordination Branch
SEN-A

July 21, 2014

Director - Air, Pesticides and Toxics
EPA Region VI
1445 Ross Avenue
Dallas, TX 75202-2733

**RE: Summary Report –Gaseous and Opacity Excess Emission and Continuous Monitoring System Performance for the period: January 1, 2014 – June 30, 2014
Sterigenics' Santa Teresa, NM Facility**

Dear Director:

Per the requirements in 40 CFR 63.10(e)(3), herein is the Summary Report for our Santa Teresa, New Mexico facility.

As provided in 40 CFR 63.10(e)(3)(vii), we are submitting only the Summary Report for this facility because:

1. The total duration of excess emissions, or process or control system parameter exceedances during the reporting period was less than 1 percent of the total operating time, and
2. CMS downtime during the reporting period was less than 5 percent of the total operating time.

The following information is submitted as required in §63.10(e)(3)(vi):

- (A) Company Name and Address of the Affected Source
Sterigenics US, LLC
2400 Airport Road
Santa Teresa, NM 88008
- (B) Identification of Hazardous Air Pollutant
Ethylene Oxide
- (C) Reporting Period Dates
Beginning: January 1, 2014
Ending: June 30, 2014
- (D) Description of Process Units
The facility employs 13 ethylene oxide/propylene oxide sterilization chambers of various sizes to process medical devices and other products. Process emissions from the sterilization chambers are treated in a Ceilcote acid-water scrubber system. Process emissions from the facility's aeration rooms and four chamber backvents are treated in a catalytic oxidizer system.
- (E) Emission and Operating Parameter Limitations Specified in Permit or Relevant Standards

Control Unit	Control Parameter	Limitations/Standards
Catalytic Oxidizer	Catalytic bed temperature Oxidizer control efficiency	Continuously monitor temp: ≥ 240 °F System efficiency ≥ 99 %
Ceilcote Acid-Wet Scrubber	Scrubber tank liquid level Scrubber liquor pH Scrubber liquor temperature Scrubber gas flow rate Scrubber gas inlet temperature Scrubber control efficiency	Record weekly ≤ 115 inches $\text{pH} \leq 2.0$ Liquor temp ≤ 120 °F Flow rate ≤ 2500 scfm @ 90 °F Inlet temperature ≤ 180 °F System efficiency ≥ 99.3 %



(F) Monitoring Equipment Manufacturers and Model Numbers

<u>Monitoring Equipment</u>	<u>Model Number</u>	<u>Serial Number</u>
Honeywell Chart recorder	Truline DR450T	8939760945047

(G) Date of Latest CMS Certification or Audit
June 28, 2014

(H) Total Operating Time of Affected Source during Reporting Period
4212.5 hours

(I) Emission Data Summary

<u>Control Unit</u>	<u>Total Duration of Excess Emissions</u>	<u>Excess Emission Duration as % of Total Hours</u>	<u>Excess Emission Duration by Cause (hours)</u>				
			<u>Startup/Shutdown</u>	<u>Control Equipment Problems</u>	<u>Process Problems</u>	<u>Other Known Causes</u>	<u>Other Unknown Causes</u>
Abator	0 hr	0%	0	0	0	0	0
Scrubber	0 hr	0%	0	0	0	0	0

(J) CMS Performance Summary

There were no emission system CMS instrumentation outages during the period.

(K) Description of Changes in CMS, Processes or Controls since Last Reporting Period

There have been no changes to the CMS, process or controls since the last reporting period.

(L) Responsible Official Certification

Based on the information and belief formed after reasonable inquiry, the statements and information in this report are true, accurate, and complete.

KATHOFFMAN

Kathleen Hoffman
Sr. Vice President – Global EHS

(M) Date of Report
July 21, 2014

If you have any questions regarding this report, please contact Jeffrey Smith at either (847) 263-3499 or JPSmith@Sterigenics.com.

Sincerely,

Kevin Wagner
Director EHS

Cc: Manager, Compliance and Enforcement Section – New Mexico AQB
Mr. Steve Ortiz – Santa Teresa General Manager



New Mexico Environment Department
Air Quality Bureau
Compliance and Enforcement Section
1301 Siler Road Building B
Santa Fe, NM 87507
Phone (505) 476-4300 Fax (505) 476-4375



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SECTION I - GENERAL COMPANY AND FACILITY INFORMATION					
A. ® Company Name: Sterigenics U.S., LLC			D. ® Facility Name: Santa Teresa Facility		
B.1 ® Company Address: 2015 Spring Rd., Ste 650			E.1 ® Facility Address: 2400 Airport Road		
B.2 ® City: Oak Brook	B.3 ® State: IL	B.4 ® Zip: 60523 ^L	E.2 ® City: Santa Teresa	E.3 ® State: NM	E.4 ® Zip: 88008
C.1 ® Company Environmental Contact: Jeffrey Smith		C.2 ® Title: EHS Manager	F.1 ® Facility Contact: Steve Ortiz		F.2 ® Title: General Manager
C.3 ® Phone Number: 847/263-3499		C.4 ® Fax Number: 847/855-6123	F.3 ® Phone Number: 575/589-9300		F.4 ® Fax Number: !! FORMTEXT 575/589-9729
C.5 ® Email Address: JPSmith@Sterigenics.com			F.5 ® Email Address: SOrtiz@Sterigenics.com		
G. Responsible Official: (Title V only):		H. Title:		I. Phone Number:	
				J. Fax Number:	
K. ® AI Number: 127-PRN20090001	L. Title V Permit Number:		M. Title V Permit Issue Date:	N. NSR Permit Number: NPR-0733M-15	O. NSR Permit Issue Date:
P. Reporting Period: From: 1/1/2014 To: 6/30/2014		OR	Q. Proposed Test Date:	OR	R. Actual Test Date:

SECTION II - TYPE OF SUBMITTAL (check one that applies)					
A. <input type="checkbox"/>	Title V Annual Compliance Certification	Permit Condition(s):	Description:		
B. <input type="checkbox"/>	Title V Semi-annual Monitoring Report	Permit Condition(s):	Description:		
C. <input type="checkbox"/>	NSPS Requirement (40CFR60)	Regulation:	Section(s):	Description:	
D. <input checked="" type="checkbox"/>	MACT Requirement (40CFR63)	Regulation: Subpart A	Section(s): 63.10(e)(3)	Description: Summary Report-Gaseous and Opacity Excess Emission	
E. <input type="checkbox"/>	NMAC Requirement (20.2.xx) or NESHAP Requirement (40CFR61)	Regulation:	Section(s):	Description:	
F. <input type="checkbox"/>	Permit or Notice of Intent (NOI) Requirement	Permit No. <input type="checkbox"/> : or NOI No. <input type="checkbox"/> :	Condition(s):	Description:	
G. <input type="checkbox"/>	Requirement of an Enforcement Action	NOV No. <input type="checkbox"/> : or SFO No. <input type="checkbox"/> : or CD No. <input type="checkbox"/> : or Other <input type="checkbox"/> :	Section(s):	Description:	

SECTION III - PERIODIC EMISSIONS TEST NOTIFICATIONS, TEST PROTOCOLS AND TEST REPORTS (if applicable)					
T. <input type="checkbox"/>	A. Test Report <input type="checkbox"/> CMT: _____	B. Test Protocol <input type="checkbox"/>	C. Notification <input type="checkbox"/> CMT: _____	Description: (Emission Units to be Tested)	
	D. Test (EPA Methods) <input type="checkbox"/>	E. Test (EPA Methods) <input type="checkbox"/>	F. RATA Test <input type="checkbox"/>	G. Opacity Test <input type="checkbox"/>	H. Portable Analyzer (Periodic Test) <input type="checkbox"/>

SECTION IV - CERTIFICATION			
After reasonable inquiry, I <u>Kathleen Hoffman</u> certify that the information in this submittal is true, accurate and complete. (name of reporting official)			
® Signature of Reporting Official: <u>Kathleen Hoffman</u>		® Title: SR. VP -Global EHS	® Date: 7/21/14
		® Responsible Official for Title V? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Reviewed By: _____

Date Reviewed: _____



11 0000472541

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US EPA, DALLAS, TX
ASSOCIATE DIRECTOR

A1/A1/CO

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COMPLIANCE ASSURANCE
& ENFORCEMENT DIV.

110000472541

NM V.8

January 27, 2016

Director - Air, Pesticides and Toxics
EPA Region VI
1445 Ross Avenue
Dallas, TX 75202-2733

**RE: Summary Report –Gaseous and Opacity Excess Emission and Continuous Monitoring System Performance for the period: July 1, 2015 – December 31, 2015
Sterigenics' Santa Teresa, NM Facility**

Dear Director:

Per the requirements in 40 CFR 63.10(e)(3), herein is the Summary Report for our Santa Teresa, New Mexico facility.

As provided in 40 CFR 63.10(e)(3)(vii), we are submitting only the Summary Report for this facility because:

1. The total duration of excess emissions, or process or control system parameter exceedances during the reporting period was less than 1 percent of the total operating time, and
2. CMS downtime during the reporting period was less than 5 percent of the total operating time.

The Santa Teresa facility encountered breakdowns of the catalytic oxidizer totaling less than 3 hours, but the breakdowns of the control equipment did not result in uncontrolled emissions being emitted to the atmosphere.

The following information is submitted as required in §63.10(e)(3)(vi):

- (A) Company Name and Address of the Affected Source
Sterigenics US, LLC
2400 Airport Road
Santa Teresa, NM 88008
- (B) Identification of Hazardous Air Pollutant
Ethylene Oxide
- (C) Reporting Period Dates
Beginning: July 1, 2015
Ending: December 31, 2015
- (D) Description of Process Units
The facility employs ethylene oxide/propylene oxide sterilization chambers of various sizes to process medical devices and other products. Process emissions from the sterilization chambers are treated in a Ceilcote acid-water scrubber system. Process emissions from the facility's aeration rooms and chamber backvents are treated in a catalytic oxidizer system.
- (E) Emission and Operating Parameter Limitations Specified in Permit or Relevant Standards

Control Unit	Control Parameter	Limitations/Standards
--------------	-------------------	-----------------------



New Mexico Environment Department
Air Quality Bureau
Compliance and Enforcement Section
525 Camino de los Marquez, Suite 1
Santa Fe, NM 87505
Phone (505) 476-4300 Fax (505) 476-4375



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SECTION I - GENERAL COMPANY AND FACILITY INFORMATION

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B.2 ® City: Oak Brook	B.3 ® State: IL	B.4 ® Zip: 60523 ^L	E.2 ® City: Santa Teresa	E.3 ® State: NM	E.4 ® Zip: 88008
C.1 ® Company Environmental Contact: Laura Hartman		C.2 ® Title: EHS Manager	F.1 ® Facility Contact: Steve Ortiz		F.2 ® Title: General Manager
C.3 ® Phone Number: 630-928-1724		C.4 ® Fax Number: 847-855-6123	F.3 ® Phone Number: 575-589-9300		F.4 ® Fax Number: 575-589-9729
C.5 ® Email Address: LHartman@Sterigenics.com			F.5 ® Email Address: SOrtiz@Sterigenics.com		
G. Responsible Official: (Title V only):		H. Title:	I. Phone Number:		J. Fax Number:
K. ® AI Number: 127-PRN2014001	L. Title V Permit Number:	M. Title V Permit Issue Date:	N. NSR Permit Number: 0733-M15-R1		O. NSR Permit Issue Date: 12/23/2014
P. Reporting Period: From: July 1, 2015 To: December 31, 2015					

SECTION II - TYPE OF SUBMITTAL (check one that applies)

A. <input type="checkbox"/>	Title V Annual Compliance Certification	Permit Condition(s):	Description:		
B. <input type="checkbox"/>	Title V Semi-annual Monitoring Report	Permit Condition(s):	Description:		
C. <input type="checkbox"/>	NSPS Requirement (40CFR60)	Regulation:	Section(s):	Description:	
D. <input checked="" type="checkbox"/>	MACT Requirement (40CFR63)	Regulation: Subpart A	Section(s): 63.10(e)(3)	Description: Summary Report-Gaseous and Opacity Excess Emission	
E. <input type="checkbox"/>	NMAC Requirement (20.2.xx) or NESHAP Requirement (40CFR61)	Regulation:	Section(s):	Description:	
F. <input type="checkbox"/>	Permit or Notice of Intent (NOI) Requirement	Permit No. <input type="checkbox"/> : or NOI No. <input type="checkbox"/> :	Condition(s):	Description:	
G. <input type="checkbox"/>	Requirement of an Enforcement Action	NOV No. <input type="checkbox"/> : or SFO No. <input type="checkbox"/> : or CD No. <input type="checkbox"/> : or Other <input type="checkbox"/> :	Section(s):	Description:	

SECTION IV - CERTIFICATION

After reasonable inquiry, I <u>Kathleen Hoffman</u> certify that the information in this submittal is true, accurate and complete. (name of reporting official)			
® Signature of Reporting Official: <u>Kathleen Hoffman</u>		® Title: SR. VP - Global EHS	® Date: 1/27/2016
		® Responsible Official for Title V? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

Reviewed By: _____

Date Reviewed: _____



AI/AI/CO

110000472541

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FEB - 3 2015

January 30, 2015

Director - Air, Pesticides and Toxics
EPA Region VI
1445 Ross Avenue
Dallas, TX 75202-2733

Air Toxics & Inspection
Coordination Branch
6EN-A

**RE: Summary Report –Gaseous and Opacity Excess Emission and Continuous Monitoring System Performance for the period: July 1, 2014 – December 31, 2014
Sterigenics' Santa Teresa, NM Facility**

Dear Director:

Per the requirements in 40 CFR 63.10(e)(3), herein is the Summary Report for our Santa Teresa, New Mexico facility.

As provided in 40 CFR 63.10(e)(3)(vii), we are submitting only the Summary Report for this facility because:

1. The total duration of excess emissions, or process or control system parameter exceedances during the reporting period was less than 1 percent of the total operating time, and
2. CMS downtime during the reporting period was less than 5 percent of the total operating time.

The following information is submitted as required in §63.10(e)(3)(vi):

(A) Company Name and Address of the Affected Source
Sterigenics US, LLC
2400 Airport Road
Santa Teresa, NM 88008

(B) Identification of Hazardous Air Pollutant
Ethylene Oxide

(C) Reporting Period Dates
Beginning: July 1, 2014
Ending: December 31, 2014

(D) Description of Process Units
The facility employs 13 ethylene oxide/propylene oxide sterilization chambers of various sizes to process medical devices and other products. Process emissions from the sterilization chambers are treated in a Ceilcote acid-water scrubber system. Process emissions from the facility's aeration rooms and four chamber backvents are treated in a catalytic oxidizer system.

(E) Emission and Operating Parameter Limitations Specified in Permit or Relevant Standards

Control Unit	Control Parameter	Limitations/Standards
Catalytic Oxidizer	Catalytic bed temperature Oxidizer control efficiency	Continuously monitor temp: ≥ 240 °F System efficiency ≥ 99 %
Ceilcote Acid-Wet Scrubber	Scrubber tank liquid level Scrubber liquor pH Scrubber liquor temperature Scrubber gas flow rate Scrubber gas inlet temperature Scrubber control efficiency	Record weekly ≤ 115 inches $\text{pH} \leq 2.0$ Liquor temp ≤ 120 °F Flow rate ≤ 2500 scfm @ 90 °F Inlet temperature ≤ 180 °F System efficiency ≥ 99.3 %



(F) Monitoring Equipment Manufacturers and Model Numbers

<u>Monitoring Equipment</u>	<u>Model Number</u>	<u>Serial Number</u>
Honeywell TV5 ST01	TVMP-EO-80000- EOO-F10-000000-00	0125Y151102800001W

(G) Date of Latest CMS Certification or Audit
Dec 1, 2014

(H) Total Operating Time of Affected Source during Reporting Period
4405 hours

(I) Emission Data Summary

<u>Control Unit</u>	<u>Total Duration of Excess Emissions</u>	<u>Excess Emission Duration as % of Total Hours</u>	<u>Excess Emission Duration by Cause (hours)</u>				
			<u>Startup/Shutdown</u>	<u>Control Equipment Problems</u>	<u>Process Problems</u>	<u>Other Known Causes</u>	<u>Other Unknown Causes</u>
Abator	0 hr	0%	0	0	0	0	0
Scrubber	0 hr	0%	0	0	0	0	0

(J) CMS Performance Summary
There were no emission system CMS instrumentation outages during the period.

(K) Description of Changes in CMS, Processes or Controls since Last Reporting Period
There have been no changes to the CMS, process or controls since the last reporting period.

(L) Responsible Official Certification
Based on the information and belief formed after reasonable inquiry, the statements and information in this report are true, accurate, and complete.

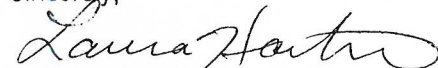


Kathleen Hoffman
Sr. Vice President – Global EHS

(M) Date of Report
January 30, 2015

If you have any questions regarding this report, please contact Laura Hartman at either (630) 928-1724 or LHartman@Sterigenics.com.

Sincerely,



Laura Hartman
EHS Manager

Cc: Manager, Compliance and Enforcement Section – New Mexico AQB
Mr. Steve Ortiz – Santa Teresa General Manager

Sterigenics International, Inc.
2015 Spring Road, Suite 650 • Oakbrook, IL 60523
Tel 800.472.4508 • Fax 630.928.1701 • www.sterigenics.com



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July 20, 2015

Director - Air, Pesticides and Toxics
EPA Region VI
1445 Ross Avenue
Dallas, TX 75202-2733

JUL 27 2015
Air Toxics & Inspection
Coordination Branch
6EN-A

AI/AI/CO

RE: Summary Report –Gaseous and Opacity Excess Emission and Continuous Monitoring System Performance for the period: January 1, 2015 – June 30, 2015 Sterigenics' Santa Teresa, NM Facility

Dear Director:

Per the requirements in 40 CFR 63.10(e)(3), herein is the Summary Report for our Santa Teresa, New Mexico facility.

As provided in 40 CFR 63.10(e)(3)(vii), we are submitting only the Summary Report for this facility because:

1. The total duration of excess emissions, or process or control system parameter exceedances during the reporting period was less than 1 percent of the total operating time, and
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Santa Teresa, NM 88008

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Ethylene Oxide

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Catalytic Oxidizer	Catalytic bed temperature	Continuously monitor temp: ≥ 240 °F
	Oxidizer control efficiency	System efficiency ≥ 99 %
Ceilcote Acid-Wet Scrubber	Scrubber tank liquid level	Record weekly ≤ 115 inches
	Scrubber liquor pH	pH ≤ 2.0
	Scrubber liquor temperature	Liquor temp ≤ 120 °F
	Scrubber gas flow rate	Flow rate ≤ 2500 scfm @ 90 °F
	Scrubber gas inlet temperature	Inlet temperature ≤ 180 °F
	Scrubber control efficiency	System efficiency ≥ 99.3 %



(F) Monitoring Equipment Manufacturers and Model Numbers

<u>Monitoring Equipment</u>	<u>Model Number</u>	<u>Serial Number</u>
Honeywell Chart recorder	Truline DR450T	8939760945047

(G) Date of Latest CMS Certification or Audit
December 1, 2014

(H) Total Operating Time of Affected Source during Reporting Period
4223 hours

(I) Emission Data Summary

<u>Control Unit</u>	<u>Total Duration of Excess Emissions</u>	<u>Excess Emission Duration as % of Total Hours</u>	<u>Excess Emission Duration by Cause (hours)</u>				
			<u>Startup/Shutdown</u>	<u>Control Equipment Problems</u>	<u>Process Problems</u>	<u>Other Known Causes</u>	<u>Other Unknown Causes</u>
Abator	0 hr	0%	0	0	0	0	0
Scrubber	0 hr	0%	0	0	0	0	0

(J) CMS Performance Summary

There were no emission system CMS instrumentation outages during the period.

(K) Description of Changes in CMS, Processes or Controls since Last Reporting Period

There have been no changes to the CMS, process or controls since the last reporting period.

(L) Responsible Official Certification

Based on the information and belief formed after reasonable inquiry, the statements and information in this report are true, accurate, and complete.

Kathleen Hoffman

Kathleen Hoffman
Sr. Vice President – Global EHS

(M) Date of Report

July 20, 2015

If you have any questions regarding this report, please contact Laura Hartman at either (630) 928-1724 or LHartman@Sterigenics.com.

Sincerely,

Laura Hartman

Laura Hartman
EHS Manager

Cc: Manager, Compliance and Enforcement Section – New Mexico AQB
Mr. Steve Ortiz – Santa Teresa General Manager



AI/AI/CO

Thompson

110000472541

4/6/8/3

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January 23, 2015

John Blevins
Director ~ Compliance Assurance and Enforcement
EPA Region VI
1445 Ross Avenue, Suite 1200
Mail Code: 6EN
Dallas, TX 75202-2733

FEB - 3 2015

Air Toxics & Inspection
Coordination Branch
6EN-A

**RE: Summary Report - Excess Gaseous Emissions and Continuous Monitoring System
Performance, Sterigenics Grand Prairie, Texas Facility - July 1, 2014 to December 31, 2014**

Dear Mr. Blevins:

As required by 40 CFR 63.366(a) (3), Sterigenics U.S., LLC is submitting this semi-annual excess emissions and continuous monitoring system summary report for our Grand Prairie, Texas facility.

40 CFR 63.10(e)(3)(vii) states: "If the total duration of excess emissions or process or control system parameter exceedances for the reporting period is less than 1 percent of the total operating time for the reporting period, and CMS downtime for the reporting period is less than 5 percent of the total operating time for the reporting period, only the summary report shall be submitted, and the full excess emissions and continuous monitoring system performance report need not be submitted unless required by the Administrator".

As set forth in the above cited regulation, we are submitting this summary report for our Grand Prairie facility because:

1. The total duration of excess emissions and the process or control system parameter exceedances for the reporting period was zero (0) hours which is less than 1 percent of the total operating time for the reporting period, and
2. CMS downtime for the reporting period was zero (0) hours, which is less than 5 percent of the total operating time for the reporting period. This facility is not required to have any Continuous Monitoring systems (CMS).

Sterigenics U.S., LLC has reviewed all applicable provisions of the operating permit. The following information is submitted as required in §63.10(e) (3) (vi):

(A) Company Name and Address of the Affected Source

Sterigenics U.S., LLC
1302 Avenue T
Grand Prairie, TX 75050

(B) Identification of Hazardous Air Pollutant

Ethylene Oxide

(C) Reporting Period Dates

Beginning: July 01, 2014

Ending: December 31, 2014

(D) Description of Process Units

The facility process units are sterilization process chambers of various sizes using ethylene oxide as the sterilant gas. Ethylene oxide process emissions are vented to an acid-water scrubber.

(E) Emission and Operating Parameter Limitations Specified in Relevant Standards

<u>Control Unit</u>	<u>Control Parameter</u>	<u>Limitations/Standards</u>
Scrubber	Scrubber tank liquid level	Record weekly/ <146.5 inches *

* 40 CFR 63.364 (b) requires that sterilization facilities using an acid-water scrubber shall either record the concentration of the scrubber liquor **or** the level of the scrubber liquor. The current permit issued requires weekly monitoring of the tank level.

(F) Monitoring Equipment Manufacturer(s) and model numbers.

Advanced Air Technologies (AAT) wet scrubber. Job No. 021105

(G) Date of Latest CMS Certification or Audit

N/A

(H) Total Operating Time of Affected Source during Reporting Period

Continuous, for a total of 4,407 hours.

(I) Emission Data Summary

<u>Control Unit</u>	<u>Total Duration of Excess Emissions</u>	<u>Excess Emission Duration as % of Total Hours</u>	<u>Excess Emission Duration by Cause</u>				
			<u>Startup/Shutdown</u>	<u>Control Equipment Problems</u>	<u>Process Problems</u>	<u>Other Known Causes</u>	<u>Other Unknown Causes</u>
Scrubber	0 hr.	0%	0	0	0	0	0

(J) CMS Performance Summary

Liquor level in the scrubber tank was recorded weekly and did not exceed permitted parameters during this reporting period.

(K) Description of Changes in CMS, Processes or Controls since Last Reporting Period

None.



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110060472541

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RECEIVE

FEB 1 2013

Air/Toxics & Inspection
Coordination Branch
6EN-A

January 25, 2013

Director - Air, Pesticides and Toxics
EPA Region VI
1445 Ross Avenue
Dallas, TX 75202-2733

**RE: Summary Report - Gaseous and Opacity Excess Emission and Continuous Monitoring
System Performance
For the period: July 1, 2012 – December 31, 2012
Sterigenics' Santa Teresa, NM Plant**

Dear Director:

Per the requirements in 40 CFR 63.10(e)(3)(vi), herein is the semi-annual Summary Report for our Santa Teresa, New Mexico facility.

As provided in 40 CFR 63.10(e)(3)(vii), we are submitting only the Summary Report for our Santa Teresa facility because:

1. The total duration of excess emissions, or process or control system parameter exceedances during the reporting period was less than 1 percent of the total operating time, and
2. CMS downtime during the reporting period was less than 5 percent of the total operating time.

The following information is submitted as required in §63.10(e)(3)(vi):

(A) Company Name and Address of the Affected Source
Sterigenics US, LLC
2400 Airport Road
Santa Teresa, NM 88008

(B) Identification of Hazardous Air Pollutant
Ethylene Oxide

(C) Reporting Period Dates
Beginning: July 1, 2012
Ending: December 31, 2012

(D) Description of Process Units
The facility employs ethylene oxide/propylene oxide sterilization chambers of various sizes to process medical devices and other products. Process emissions from the facility's sterilization chambers are treated in a Ceilcote acid-water scrubber system. Process emissions from the facility's aeration rooms are treated in a catalytic oxidizer system.

(E) Emission and Operating Parameter Limitations Specified in Relevant Standards

Control Unit	Control Parameter	Limitations/Standards
Abator	Catalytic bed temperature	Continuously monitor: >240°F
Scrubber	Scrubber tank liquid level	Record weekly



(F) Monitoring Equipment Manufacturers and Model Numbers

<u>Monitoring Equipment</u>	<u>Model Number</u>	<u>Serial Number</u>
Honeywell Chart Recorder	TVMP-EO-800-000	0125Y151102800001W

(G) Date of Latest CMS Certification or Audit
Not applicable

(H) Total Operating Time of Affected Source during Reporting Period
4402 hours

(I) Emission Data Summary

<u>Control Unit</u>	<u>Total Duration of Excess Emissions</u>	<u>Excess Emission Duration as % of Total Hours</u>	<u>Excess Emission Duration by Cause (hours)</u>				
			<u>Startup/Shutdown</u>	<u>Control Equipment Problems</u>	<u>Process Problems</u>	<u>Other Known Causes</u>	<u>Other Unknown Causes</u>
Abator	0 hr	0%	0	0	0	0	0
Scrubber	0 hr	0%	0	0	0	0	0

(J) CMS Performance Summary

There were no instrumentation outages of the emission treatment systems during the period.

(K) Description of Changes in CMS, Processes or Controls since Last Reporting Period
None.

(L) Responsible Official Certification

Based on the information and belief formed after reasonable inquiry, the statements and information in this report are true, accurate, and complete.

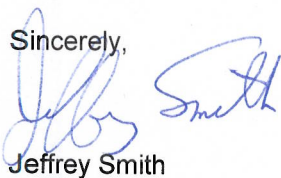


Kathleen Hoffman
Sr. Vice President – Global EHS

(M) Date of Report
January 25, 2013

If you have any questions regarding this report, please contact Jeffrey Smith at either (847) 263-3499 or JPSmith@Sterigenics.com.

Sincerely,



Jeffrey Smith
EHS Manager



11 0000472541

AI/AI/c

RECEIVED
US EPA, DALLAS, TX
ASSOCIATE DIRECTOR
16 SEP -6 AM 9:17
COMPLIANCE ASSURANCE
& ENFORCEMENT DIV.

September 2, 2016

Director- Air, Pesticides & Toxics
US EPA Region VI
1445 Ross Avenue
Dallas, Texas 75202-2733

RE: Notification of Scheduled Emission System Performance Test
Sterigenics' Santa Teresa, New Mexico Facility
NSR Permit No: 0733-M15-R1

Dear Sir:

Please be advised the annual performance test of the catalytic oxidizer emission control system at our Santa Teresa, NM facility will occur on November 15, 2016 at approximately 10 am. The facility is located at:

2400 Airport Road
Santa Teresa, NM 88008

This notification is being provided per 40 CFR 63.9(e). The annual oxidizer performance test is being done pursuant to 40 CFR 63.363(b)(4)(i).

Please call me at (630) 928-1724 if you have any questions.

Sincerely,



Laura Hartman
EHS Manager

cc: Steve Ortiz, Santa Teresa Facility General Manager

**TEST PROTOCOL FOR
AIR POLLUTION SOURCE TESTING
OF AN ETHYLENE OXIDE EMISSION-CONTROL SYSTEM
OPERATED BY STERIGENICS U.S., LLC.
IN SANTA TERESA, NEW MEXICO**

Submitted to:

**NEW MEXICO ENVIRONMENT DEPARTMENT
Air Quality Bureau
525 Camino de los Marquez, Suite 1
Santa Fe, New Mexico, 87505-1816**

Submitted by:

**STERIGENICS U.S., LLC.
2400 Airport Road
Santa Teresa, New Mexico 88008**

Prepared by:

**ECSI, INC.
PO Box 848
San Clemente, California 92674-0848**

August 10, 2016

ECSI

CONTACT SUMMARY

CLIENT

Ms. Laura Hartman
Environmental Health and Safety
STERIGENICS U.S., LLC.
2015 Spring Road, Suite 650
Oak Brook, Illinois 60523

Phone: (630)928-1724
email: LHartman@sterigenics.com

SOURCE LOCATION

Mr. Steve Ortiz
General Manager
STERIGENICS U.S., LLC.
2400 Airport Road
Santa Teresa, New Mexico 88008

Phone: (575)589-9300
email: Sortiz@sterigenics.com

PROPOSED TEST DATE

November 15, 2016

REGULATORY AGENCY

NEW MEXICO ENVIRONMENT DEPARTMENT
Air Quality Bureau
525 Camino de los Marquez, Suite 1
Santa Fe, New Mexico, 87505-1816

Phone: (505)476-4300
FAX: (505)476-4375
email: Stacktest.aqb@state.nm.us

TESTING CONTRACTOR

Daniel P. Kremer
Project Manager
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PO Box 848
San Clemente, California 92674-0848

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email: dankremer@ecsi1.com

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1.0 INTRODUCTION

ECSi, Inc. proposes to conduct air pollution source testing of an ethylene oxide (EtO) emission-control system operated by Sterigenics U.S., LLC. in Santa Teresa, New Mexico. The control device to be tested is Donaldson Abator catalytic oxidizer, which is currently used to control emissions from two aeration rooms and all 13 sterilization chamber backvents. The purpose of the testing program will be to evaluate continued compliance with EPA requirements under the current National Emissions Standards for Hazardous Air Pollutants (NESHAP), and with the requirements specified in the New Source Review Permit, #0733-M15-R1, issued by the New Mexico Environment Department (NMED).

2.0 EQUIPMENT

The EtO gas-sterilization system is comprised of thirteen commercial sterilizers, all discharging through liquid-ring vacuum pumps to a packed-tower acid scrubber emission control device. Two aeration rooms and thirteen sterilization chamber backvents are all discharged to a Donaldson Abator catalytic oxidizer emission-control device. The gas-sterilization and emission-control equipment consist of the following:

- Thirteen Gas Sterilizers, each comprised of a steam-heated sterilization chamber (varying in size from 13-30 pallet capacity), a liquid ring recirculating vacuum pump chamber evacuation system ("chamber vacuum vent"), and a backdraft valve ("chamber exhaust vent");
- Two aeration rooms, each comprised of a heated aeration chamber and an exhaust system

Sterilizer vacuum pump emissions are controlled by:

- One packed-tower chemical scrubber, equipped with a packed reaction/interface column, a scrubber fluid recirculation system, a scrubber fluid reaction/storage tank, and a dedicated blower exhaust system.

Aeration room and sterilizer backvent emissions are controlled by:

- One Donaldson EtO Abator catalytic oxidizer, 20,000 SCFM, equipped with a prefilter, a gas-fired heater, an exhaust gas heat exchanger, a reactive catalyst bed, and an exhaust blower.

3.0 TESTING

EtO source testing will be conducted in accordance with the procedures outlined in USEPA CFR40, Part 63.365(d)(2). EtO concentration measurement for each test run will be conducted simultaneously at the inlet and outlet of the catalytic oxidizer during a one-hour interval of the 24-hour aeration process, and during the 15-minute sterilizer backvent duration. A total of three one-hour aeration test runs and one 15-minute backvent test run will be performed.

During aeration and backvent testing, EtO concentration at the inlet and the outlet of the catalytic oxidizer will be determined using direct source sample injection into the gas chromatograph (GC). All aeration and backvent testing will be performed using recently sterilized product. The testing program will be conducted in accordance with the procedures outlined in the following sections.

4.0 RULE/COMPLIANCE REQUIREMENTS

The EtO gas-sterilization system at Sterigenics U.S., LLC. is being tested to determine compliance with the current federal EPA National Emissions Standard for Hazardous Air Pollutants (NESHAP) for ethylene oxide, and with NMED requirements. The current testing will demonstrate continued compliance with the following requirements:

- The emissions from the aeration process must be discharged to control equipment with an EtO emission-reduction efficiency of at least 99.0% by weight.
- The emissions from the sterilizer backvents must be discharged to control equipment with an EtO emission-reduction efficiency of at least 99.0% by weight.

Testing is required to demonstrate compliance with these requirements. Source testing of the emission-control device is required annually, in accordance with NMED requirements.

5.0 TEST METHOD REFERENCE

5.1 INTRODUCTION

EtO source testing will be conducted in accordance with the procedures outlined in USEPA CFR40, Part 63.365(d)(2), using EPA Method 18 as specified in 40CFR, Part 60, Appendix A. EtO concentration measurement for each test run will be conducted simultaneously at the inlet and outlet of the catalytic oxidizer during a one-hour interval of the 24-hour aeration process, and during the 15-minute sterilizer backvent duration. A total of three one-hour aeration test runs and one 15-minute backvent test run will be performed.

During aeration and backvent testing, EtO concentration at the inlet and the outlet of the catalytic oxidizer will be determined using direct source sample injection into the gas chromatograph (GC). All aeration and backvent testing will be performed using recently sterilized product.

Operation and documentation of process conditions will be performed by personnel from Sterigenics using existing monitoring instruments installed by the manufacturer on the equipment to be tested. In accordance with USEPA CFR40, Part 63.364 (c), catalyst bed temperature will be recorded.

5.2 ETO CONTROL EFFICIENCY MEASUREMENT

During aeration and backvent testing, EtO concentration at the inlet and outlet of the catalytic oxidizer will be determined using direct source sample injection into the GC. Since the source gas flow is identical at the inlet and outlet of the catalytic oxidizer control-efficiency of EtO during aeration and backvent will be calculated by comparing the concentration of EtO vented to the system inlet to the concentration of EtO vented from the system outlet.

During aeration and backvent, vented gas will be analyzed by an SRI, Model 8610, portable gas chromatograph (GC), equipped with the following: dual, heated sample loops and injectors; dual columns; and dual detectors. A flame ionization detector (FID) will be used to quantify inlet EtO concentration, and a photoionization detector (PID) will be used to quantify low-level EtO concentration at the emission-control device outlet.

5.3 SAMPLE TRANSPORT

Source gas will be pumped to the GC at approximately 500-1000 cubic centimeters per minute (cc/min) from the sampling ports through two lengths of Teflon® sample line, each with a nominal volume of approximately 75 cubic centimeters (cc) and an outer diameter of 0.25 inch. At the inlet of the catalytic oxidizer, the sampling port is a manifold installed by the equipment manufacturer, and is located in the plenum immediately upstream of the oxidizer catalyst bed. At the outlet of the catalytic oxidizer, sampling ports will be located in the exhaust stack downstream of the catalyst bed.

5.4 GC INJECTION

Source-gas samples will then be injected into the GC which will be equipped with two heated sampling loops, each containing a volume of approximately 2cc and maintained at 100 degrees Celsius (C). Injections will occur at approximately one-minute intervals during backvent testing, and at approximately five-minute intervals during aeration testing. Helium will be the carrier gas for both the FID and PID.

5.5 GC CONDITIONS

The packed columns for the GC will both be operated at 80 degrees C. The columns will be stainless steel, 6 feet long, 0.125 inch outer diameter, packed with 1 percent SP-1000 on 60/80 mesh Carbopack B.

During the analysis, the FID will be operated at 250 degrees C. The support gases for the FID will be hydrogen (99.995% pure) and air (99.9999% pure). Any unused sample gas will be vented from the GC system back to the inlet of the control device being tested.

5.6 CALIBRATION STANDARDS

The FID will be calibrated for mid-range part-per-million-by-volume (ppmv) level analysis using gas proportions similar to the following:

- 1) 100 ppmv EtO, balance nitrogen
- 2) 50 ppmv EtO, balance nitrogen (audit gas)
- 3) 10 ppmv EtO, balance nitrogen
- 4) 1 ppmv EtO, balance nitrogen

The PID will be calibrated for low-range ppmv level analysis using gas proportions similar to the following:

- 1) 100 ppmv EtO, balance nitrogen
- 2) 50 ppmv EtO, balance nitrogen (audit gas)
- 3) 10 ppmv EtO, balance nitrogen
- 4) 1 ppmv EtO, balance nitrogen

Each of these calibration standards will be in a separate, certified manufacturer's cylinder. Copies of the calibration gas laboratory certificates will be included with the final report.

5.7 SAMPLING DURATION

Since aeration is a 24-hour process at this facility, with constant discharge flow from the aeration chambers to the emission-control system, aeration testing will consist of three 1-hour test runs. Each test run will be performed with recently sterilized product in the aeration chambers. Backvent testing will consist of one 15-minute test run, which encompasses the entire duration of the backvent process. The test run will be performed with recently sterilized product in the sterilization chamber.

5.9 CONTROL-EFFICIENCY CALCULATIONS

Control efficiency of EtO will be calculated for aeration and backvent. Results of the control-efficiency testing will be summarized in the final report.

6.0 TEST SCENARIO

The aeration and backvent testing will be performed during normal process load conditions. Three aeration test runs and one backvent test run will be conducted in series to verify the performance of the emission-control device. The testing schedule is as follows:

- 1) Testing equipment is set up and calibrated.
- 2) Backvent Test Run #1 is conducted at the conclusion of the sterilization cycle of one the 13 sterilizers. Sampling is performed at the inlet and the outlet of the catalytic oxidizer. Sterilized product is then transferred into aeration.
- 3) Aeration Phase Test Run #1 is conducted with recently sterilized product in aeration. Sampling is performed at the inlet and the outlet of the catalytic oxidizer.
- 4) Aeration Phase Test Run #2 is conducted with recently sterilized product in aeration. Sampling is performed at the inlet and the outlet of the catalytic oxidizer.
- 5) Aeration Phase Test Run #3 is conducted with recently sterilized product in aeration. Sampling is performed at the inlet and the outlet of the catalytic oxidizer.
- 6) Post calibration check is performed, testing equipment is packed.

7.0 QA/QC

7.1 FIELD TESTING QUALITY ASSURANCE

At the beginning of the test, the sampling system will be leak checked at a vacuum of 15 inches of mercury. The sampling system will be considered leak free when the flow indicated by the rotameters falls to zero.

At the beginning of the test, a system blank will be analyzed to ensure that the sampling system is free of EtO. Ambient air will be introduced at the end of the heated sampling line and drawn through the sampling system line to the GC for analysis. The resulting chromatogram also will provide a background level for non-EtO components (i.e. ambient air, carbon dioxide, water vapor) which are present in the source gas stream due to the ambient dilution air which is drawn into the emission-control device, and due to the destruction of EtO by the emission-control device which produces carbon dioxide and water vapor. This chromatogram, designated AMB, will be included with the calibration data in the final report.

7.2 CALIBRATION PROCEDURES

The GC system will be calibrated at the beginning and conclusion of each day's testing. Using the Peaksimple II analytical software, a point-to-point calibration curve will be constructed for each detector. A gas cylinder of similar composition as the calibration gases, but certified by a separate supplier, will be used to verify calibration gas composition and GC performance.

All calibration gases and support gases used will be of the highest purity and quality available. A copy of the laboratory certification for each calibration gas will be included in the final report.

8.0 FINAL TEST REPORT DESCRIPTION

The test results will be summarized in a written report. This report will be submitted to NMED no later than 60 days after the conclusion of the field testing. It will include results for EtO control efficiency of the emission-control system. The report will contain:

- Summary tables with comparisons of the test results to rule limits;
- Copies of all intermediate data tables and calculation worksheets;
- Copies of all GC chromatograms from calibration runs and sample injections; and
- Laboratory calibration certificates for all calibration gases and all applicable measurement instruments.



AI/AI/CO

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RECEIVE

NM541V.7

October 1, 2015

Director- Air, Pesticides & Toxics
US EPA Region VI
1445 Ross Avenue
Dallas, Texas 75202-2733

OCT 5 2015

Air Toxics & Inspection
Coordination Branch
6EN-A

RE: Notification of Scheduled Emission System Performance Test
Sterigenics' Santa Teresa, New Mexico Facility
NSR Permit No: 0733-M15-R1

OCT 5 2015

Dear Sir:

Please be advised the annual performance test of the catalytic oxidizer emission control system at our Santa Teresa, NM facility will occur on December 4, 2015 at approximately 10 am. The facility is located at:

2400 Airport Road
Santa Teresa, NM 88008

This notification is being provided per 40 CFR 63.9(e). The annual oxidizer performance test is being done pursuant to 40 CFR 63.363(b)(4)(i).

Please call me at (630) 928-1724 if you have any questions.

Sincerely,

Laura Hartman
EHS Manager

cc: Steve Ortiz, Santa Teresa Facility General Manager

**TEST PROTOCOL FOR
AIR POLLUTION SOURCE TESTING
OF AN ETHYLENE OXIDE EMISSION-CONTROL SYSTEM
OPERATED BY STERIGENICS U.S., LLC.
IN SANTA TERESA, NEW MEXICO**

Submitted to:

**NEW MEXICO ENVIRONMENT DEPARTMENT
Air Quality Bureau
525 Camino de los Marquez, Suite 1
Santa Fe, New Mexico, 87505-1816**

Submitted by:

**STERIGENICS U.S., LLC.
2400 Airport Road
Santa Teresa, New Mexico 88008**

Prepared by:

**ECSI, INC.
PO Box 848
San Clemente, California 92674-0848**

September 30, 2015

ECSi

CONTACT SUMMARY

CLIENT

Ms. Laura Hartman
Environmental Health and Safety
STERIGENICS U.S., LLC.
2015 Spring Road, Suite 650
Oak Brook, Illinois 60523

Phone: (630)928-1724
email: LHartman@sterigenics.com

SOURCE LOCATION

Mr. Steve Ortiz
General Manager
STERIGENICS U.S., LLC.
2400 Airport Road
Santa Teresa, New Mexico 88008

Phone: (575)589-9300
email: SOrtiz@sterigenics.com

PROPOSED TEST DATE

December 4, 2015

REGULATORY AGENCY

NEW MEXICO ENVIRONMENT DEPARTMENT
Air Quality Bureau
525 Camino de los Marquez, Suite 1
Santa Fe, New Mexico, 87505-1816

Phone: (505)476-4300
FAX: (505)476-4375
email: Stacktest.aqb@state.nm.us

TESTING CONTRACTOR

Daniel P. Kremer
Project Manager
ECSi, Inc.
PO Box 848
San Clemente, California 92674-0848

Phone: (949)400-9145
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email: dankremer@ecsi1.com

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1.0 INTRODUCTION

ECSi, Inc. proposes to conduct air pollution source testing of an ethylene oxide (EtO) emission-control system operated by Sterigenics U.S., LLC. in Santa Teresa, New Mexico. The control device to be tested is Donaldson Abator catalytic oxidizer, which is currently used to control emissions from two aeration rooms and all 13 sterilization chamber backvents. The purpose of the testing program will be to evaluate continued compliance with EPA requirements under the current National Emissions Standards for Hazardous Air Pollutants (NESHAP), and with the requirements specified in the New Source Review Permit, #0733-M15-R1, issued by the New Mexico Environment Department (NMED).

2.0 EQUIPMENT

The EtO gas-sterilization system is comprised of thirteen commercial sterilizers, all discharging through liquid-ring vacuum pumps to a packed-tower acid scrubber emission control device. Two aeration rooms and four sterilization chamber backvents are all discharged to a Donaldson Abator catalytic oxidizer emission-control device. The gas-sterilization and emission-control equipment consist of the following:

- Thirteen Gas Sterilizers, each comprised of a steam-heated sterilization chamber (varying in size from 13-30 pallet capacity), a liquid ring recirculating vacuum pump chamber evacuation system ("chamber vacuum vent"), and a backdraft valve ("chamber exhaust vent");
- Two aeration rooms, each comprised of a heated aeration chamber and an exhaust system

Sterilizer vacuum pump emissions are controlled by:

- One packed-tower chemical scrubber, equipped with a packed reaction/interface column, a scrubber fluid recirculation system, a scrubber fluid reaction/storage tank, and a dedicated blower exhaust system.

Aeration room and sterilizer backvent emissions are controlled by:

- One Donaldson EtO Abator catalytic oxidizer, 20,000 SCFM, equipped with a prefilter, a gas-fired heater, an exhaust gas heat exchanger, a reactive catalyst bed, and an exhaust blower.

3.0 TESTING

EtO source testing will be conducted in accordance with the procedures outlined in USEPA CFR40, Part 63.365(d)(2). EtO emissions monitoring for each test run will be conducted simultaneously at the inlet and outlet of the catalytic oxidizer during a one-hour interval of the 24-hour aeration process, and during the 15-minute sterilizer backvent duration. A total of three one-hour aeration test runs and one 15-minute backvent test run will be performed.

During aeration and backvent testing, EtO emissions at the inlet and the outlet of the catalytic oxidizer will be determined using direct source sample injection into the gas chromatograph (GC). All aeration and backvent testing will be performed using recently sterilized product. The testing program will be conducted in accordance with the procedures outlined in the following sections.

4.0 RULE/COMPLIANCE REQUIREMENTS

The EtO gas-sterilization system at Sterigenics U.S., LLC. is being tested to determine compliance with the current federal EPA National Emissions Standard for Hazardous Air Pollutants (NESHAP) for ethylene oxide, and with NMED requirements. The current testing will demonstrate continued compliance with the following requirements:

- The emissions from the aeration process must be discharged to control equipment with an EtO emission-reduction efficiency of at least 99.0% by weight.
- The emissions from the sterilizer backvents must be discharged to control equipment with an EtO emission-reduction efficiency of at least 99.0% by weight.

Testing is required to demonstrate compliance with these requirements. Source testing of the emission-control device is required annually, in accordance with NMED requirements.

5.0 TEST METHOD REFERENCE

5.1 INTRODUCTION

EtO source testing will be conducted in accordance with the procedures outlined in USEPA CFR40, Part 63.365(d)(2), using EPA Method 18 as specified in 40CFR, Part 60, Appendix A. EtO emissions monitoring for each test run will be conducted simultaneously at the inlet and outlet of the catalytic oxidizer during a one-hour interval of the 24-hour aeration process, and during the 15-minute sterilizer backvent duration. A total of three one-hour aeration test runs and one 15-minute backvent test run will be performed.

During aeration and backvent testing, EtO emissions at the inlet and the outlet of the catalytic oxidizer will be determined using direct source sample injection into the gas chromatograph (GC). All aeration and backvent testing will be performed using recently sterilized product.

Operation and documentation of process conditions will be performed by personnel from Sterigenics using existing monitoring instruments installed by the manufacturer on the equipment to be tested. In accordance with USEPA CFR40, Part 63.364 (c), catalyst bed temperature will be recorded.

5.2 VOLUMETRIC FLOW MEASUREMENT

Exhaust gas flow at the outlet of the catalytic oxidizer will be determined by EPA Method 2C using a standard pitot tube and an inclined-oil manometer. Sampling ports will be located far enough from any flow disturbances to permit accurate flow measurement.

Temperature measurements will be obtained from a type K thermocouple and thermometer attached to the sampling probe. Exhaust gas composition will be assumed to be air and small amounts of water vapor. Water vapor will be negligible, at about 3 percent.

5.3 CONTROL EFFICIENCY AND MASS EMISSIONS MEASUREMENT

During aeration and backvent testing, EtO emissions at the inlet and outlet of the catalytic oxidizer will be determined using direct source sample injection into the GC. The mass of EtO emitted to the inlet and from the outlet will be determined using the equation shown below in Section 5.9. Mass-mass control-efficiency

of EtO during aeration and backvent will be calculated by comparing the mass of EtO vented to the system inlet to the mass of EtO vented from the system outlet.

During aeration and backvent, vented gas will be analyzed by an SRI, Model 8610, portable gas chromatograph (GC), equipped with the following: dual, heated sample loops and injectors; dual columns; and dual detectors. A flame ionization detector (FID) will be used to quantify inlet EtO emissions, and a photoionization detector (PID) will be used to quantify low-level EtO emissions at the emission-control device outlet.

5.4 SAMPLE TRANSPORT

Source gas will be pumped to the GC at approximately 500-1000 cubic centimeters per minute (cc/min) from the sampling ports through two lengths of Teflon® sample line, each with a nominal volume of approximately 75 cubic centimeters (cc) and an outer diameter of 0.25 inch. At the inlet of the catalytic oxidizer, the sampling port will be located in the plenum immediately upstream of the oxidizer catalyst bed. At the outlet of the catalytic oxidizer, sampling ports will be located in the exhaust stack downstream of the catalyst bed.

5.5 GC INJECTION

Source-gas samples will then be injected into the GC which will be equipped with two heated sampling loops, each containing a volume of approximately 2cc and maintained at 100 degrees Celsius (C). Injections will occur at approximately one-minute intervals during backvent testing, and at approximately five-minute intervals during aeration testing. Helium will be the carrier gas for both the FID and PID.

5.6 GC CONDITIONS

The packed columns for the GC will both be operated at 80 degrees C. The columns will be stainless steel, 6 feet long, 0.125 inch outer diameter, packed with 1 percent SP-1000 on 60/80 mesh Carbopack B.

During the analysis, the FID will be operated at 250 degrees C. The support gases for the FID will be hydrogen (99.995% pure) and air (99.9999% pure). Any unused sample gas will be vented from the GC system back to the inlet of the control device being tested.

5.7 CALIBRATION STANDARDS

The FID will be calibrated for mid-range part-per-million-by-volume (ppmv) level analysis using gas proportions similar to the following:

- 1) 100 ppmv EtO, balance nitrogen
- 2) 50 ppmv EtO, balance nitrogen (audit gas)
- 3) 10 ppmv EtO, balance nitrogen
- 4) 1 ppmv EtO, balance nitrogen

The PID will be calibrated for low-range ppmv level analysis using gas proportions similar to the following:

- 1) 100 ppmv EtO, balance nitrogen
- 2) 50 ppmv EtO, balance nitrogen (audit gas)
- 3) 10 ppmv EtO, balance nitrogen
- 4) 1 ppmv EtO, balance nitrogen

Each of these calibration standards will be in a separate, certified manufacturer's cylinder. Copies of the calibration gas laboratory certificates will be included with the final report.

5.8 SAMPLING DURATION

Since aeration is a 24-hour process at this facility, with constant discharge flow from the aeration chambers to the emission-control system, aeration testing will consist of three 1-hour test runs. Each test run will be performed with recently sterilized product in the aeration chambers. Backvent testing will consist of one 15-minute test run, which encompasses the entire duration of the backvent process. The test run will be performed with recently sterilized product in the sterilization chamber.

5.9 CONTROL-EFFICIENCY/MASS-EMISSIONS CALCULATIONS

Mass emissions of EtO during aeration will be calculated using the following equation:

$$\text{MassRate} = (\text{VolFlow})(\text{MolWt})(\text{ppmv EtO}/10^6)/(\text{MolVol})$$

Where:

MassRate	=	EtO mass flow rate, pounds per minute
VolFlow	=	Corrected volumetric flow rate, standard cubic feet per minute at 68 degrees F
MolWt	=	44.05 pounds EtO per pound mole
ppmv EtO	=	EtO concentration, parts per million by volume
10^6	=	Conversion factor, ppmv per "cubic foot per cubic foot"
MolVol	=	385.32 cubic feet per pound mole at one atmosphere and 68 degrees F

Mass-mass control efficiency of EtO will be calculated for aeration and backvent. Results of the control-efficiency testing will be summarized in the final report.

6.0 TEST SCENARIO

The aeration and backvent testing will be performed during normal process load conditions. Three aeration test runs and one backvent test run will be conducted in series to verify the performance of the emission-control device. The testing schedule is as follows:

- 1) Testing equipment is set up and calibrated.
- 2) Backvent Test Run #1 is conducted at the conclusion of the sterilization cycle of one the 13 sterilizers. Sampling is performed at the inlet and the outlet of the catalytic oxidizer. Sterilized product is then transferred into aeration.
- 3) Aeration Phase Test Run #1 is conducted with recently sterilized product in aeration. Sampling is performed at the inlet and the outlet of the catalytic oxidizer.
- 4) Aeration Phase Test Run #2 is conducted with recently sterilized product in aeration. Sampling is performed at the inlet and the outlet of the catalytic oxidizer.
- 5) Aeration Phase Test Run #3 is conducted with recently sterilized product in aeration. Sampling is performed at the inlet and the outlet of the catalytic oxidizer.
- 6) Post calibration check is performed, testing equipment is packed.

7.0 QA/QC

7.1 FIELD TESTING QUALITY ASSURANCE

At the beginning of the test, the sampling system will be leak checked at a vacuum of 15 inches of mercury. The sampling system will be considered leak free when the flow indicated by the rotameters falls to zero.

At the beginning of the test, a system blank will be analyzed to ensure that the sampling system is free of EtO. Ambient air will be introduced at the end of the heated sampling line and drawn through the sampling system line to the GC for analysis. The resulting chromatogram also will provide a background level for non-EtO components (i.e. ambient air, carbon dioxide, water vapor) which are present in the source gas stream due to the ambient dilution air which is drawn into the emission-control device, and due to the destruction of EtO by the emission-control device which produces carbon dioxide and water vapor. This chromatogram, designated AMB, will be included with the calibration data in the final report.

7.2 CALIBRATION PROCEDURES

The GC system will be calibrated at the beginning and conclusion of each day's testing. Using the Peaksimple II analytical software, a point-to-point calibration curve will be constructed for each detector. A gas cylinder of similar composition as the calibration gases, but certified by a separate supplier, will be used to verify calibration gas composition and GC performance.

All calibration gases and support gases used will be of the highest purity and quality available. A copy of the laboratory certification for each calibration gas will be included in the final report.

8.0 FINAL TEST REPORT DESCRIPTION

The test results will be summarized in a written report. This report will be submitted to NMED no later than 60 days after the conclusion of the field testing. It will include results for EtO control efficiency of the emission-control system and mass emissions of EtO to the atmosphere from the emission-control system outlet. The report will contain:

- Summary tables with comparisons of the test results to rule limits;
- Copies of all intermediate data tables and calculation worksheets;
- Copies of all GC chromatograms from calibration runs and sample injections; and
- Laboratory calibration certificates for all calibration gases and all applicable measurement instruments.



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OCT 23 2013

Air/Toxics & Inspection
Coordination Branch
6EN-A

October 2, 2013

Mr. David Garcia - Associate Director
Air/Toxics & Inspection Coordination Branch
US EPA Region 6
1445 Ross Avenue (6EN-AA)
Dallas, Texas 75202-2733

RE: Notification of Scheduled Emission System Performance Test
Sterigenics' Santa Teresa, New Mexico Facility
NSR Permit No: 0733-M15

Dear Sir:

Please be advised that the annual performance test of the catalytic oxidizer emission control system at our Santa Teresa, NM facility will occur on December 4, 2013 at approximately 10 am. The facility is located at:

2400 Airport Road
Santa Teresa, NM 88008

This notification is being provided per 40 CFR 63.9(e). The annual oxidizer performance test is being done pursuant to 40 CFR 63.363(b)(4)(i). Enclosed is the test protocol for the performance test.

Please call me at (847) 263-3499 if you have any questions.

Sincerely,

Jeffrey Smith
EHS Manager

encl.

cc: Steve Ortiz, Santa Teresa Facility General Manager

**TEST PROTOCOL FOR
AIR POLLUTION SOURCE TESTING
OF AN ETHYLENE OXIDE EMISSION-CONTROL SYSTEM
OPERATED BY STERIGENICS U.S., LLC.
IN SANTA TERESA, NEW MEXICO**

Submitted to:

**NEW MEXICO ENVIRONMENT DEPARTMENT
Air Quality Bureau
1301 Siler Road, Building B
Santa Fe, New Mexico 87507**

Submitted by:

**STERIGENICS U.S., LLC.
2400 Airport Road
Santa Teresa, New Mexico 88008**

Prepared by:

**ECSI, INC.
PO Box 848
San Clemente, California 92674-0848**

October 2, 2013

ECSI

CONTACT SUMMARY

CLIENT

Mr. Jeff Smith
Environmental Health and Safety
STERIGENICS U.S., LLC.
2015 Spring Road, Suite 650
Oak Brook, Illinois 60523

Phone: (847)263-3499
email: JPsmith@sterigenics.com

SOURCE LOCATION

Mr. Steve Ortiz
General Manager
STERIGENICS U.S., LLC.
2400 Airport Road
Santa Teresa, New Mexico 88008

Phone: (575)589-9300
email: SOrtiz@sterigenics.com

PROPOSED TEST DATE

Wednesday, December 4, 2013

REGULATORY AGENCY

NEW MEXICO ENVIRONMENT DEPARTMENT
Air Quality Bureau
1301 Siler Road, Building B
Santa Fe, New Mexico 87507

Phone: (505)476-4300
FAX: (505)476-4375
email: Stacktest.aqb@state.nm.us

TESTING CONTRACTOR

Daniel P. Kremer
Project Manager
ECSi, Inc.
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San Clemente, California 92674-0848

Phone: (949)400-9145
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email: dankremer@ecsi1.com

ECSi

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1.0 INTRODUCTION

ECSi, Inc. proposes to conduct air pollution source testing of an ethylene oxide (EtO) emission-control system operated by Sterigenics U.S., LLC. in Santa Teresa, New Mexico. The control device to be tested is Donaldson Abator catalytic oxidizer, which is currently used to control emissions from two aeration rooms and 4 sterilization chamber backvents. The purpose of the testing program will be to evaluate continued compliance with EPA requirements under the current National Emissions Standards for Hazardous Air Pollutants (NESHAP), and with the requirements specified in the New Source Review Permit, #0733-M15, issued by the New Mexico Environment Department (NMED).

2.0 EQUIPMENT

The EtO gas-sterilization system is comprised of thirteen commercial sterilizers, all discharging through dry screw or liquid-ring vacuum pumps to a packed-tower acid scrubber emission control device. Two aeration rooms and four sterilization chamber backvents are all discharged to Donaldson Abator catalytic oxidizer emission-control device. The gas-sterilization and emission-control equipment consists of the following:

- Thirteen Gas Sterilizers, each comprised of a steam-heated sterilization chamber (varying in size from 13-30 pallet capacity), a dry screw or liquid ring recirculating vacuum pump chamber evacuation system ("chamber vacuum vent"), and a backdraft valve ("chamber exhaust vent");
- Two aeration rooms and aeration cells, each comprised of a heated aeration chamber and a chamber exhaust system

Sterilizer vacuum pump emissions are controlled by:

- One packed-tower chemical scrubber, equipped with a packed reaction/interface column, a scrubber fluid recirculation system, a scrubber fluid reaction/storage tank, and a dedicated blower exhaust system.

Aeration room and sterilizer backvent (Sterilizers 8, 9, 10 and 13) emissions are controlled by:

- One Donaldson EtO Abator catalytic oxidizer, 20,000 SCFM, equipped with a prefilter, a gas-fired heater, an exhaust gas heat exchanger, a reactive catalyst bed, and an exhaust blower.

3.0 TESTING

EtO source testing will be conducted in accordance with the procedures outlined in USEPA CFR40, Part 63.365. EtO emissions monitoring for each test run will be conducted simultaneously at the inlet and outlet of the catalytic oxidizer during a one-hour interval of the 24-hour aeration process, and during the 15-minute sterilizer backvent duration. A total of three one-hour aeration test runs and at least one 15-minute backvent test run will be performed.

During aeration and backvent testing, EtO emissions at the inlet and the outlet of the catalytic oxidizer will be determined using direct source sample injection into the gas chromatograph (GC). All aeration and backvent testing will be performed using recently sterilized product. The testing program will be conducted in accordance with the procedures outlined in the following sections.

4.0 RULE/COMPLIANCE REQUIREMENTS

The EtO gas-sterilization system at Sterigenics U.S., LLC. is being tested to determine compliance with the current federal EPA National Emissions Standard for Hazardous Air Pollutants (NESHAP) for ethylene oxide, and with NMED requirements. The current testing will demonstrate continued compliance with the following requirements:

- The emissions from the aeration process must be discharged to control equipment with an EtO emission-reduction efficiency of at least 99.0% by weight.
- The emissions from the backvents of Sterilizers 8, 9, 10, and 13 must be discharged to control equipment with an EtO emission-reduction efficiency of at least 99.0%.

Testing is required to demonstrate compliance with these requirements. Source testing of the emission-control device is required annually, in accordance with NMED requirements.

5.0 TEST METHOD REFERENCE

5.1 INTRODUCTION

EtO source testing will be conducted in accordance with the procedures outlined in USEPA CFR40, Part 63.365. EtO emissions monitoring for each test run will be conducted simultaneously at the inlet and outlet of the catalytic oxidizer during a one-hour interval of the 24-hour aeration process, and during the 15-minute sterilizer backvent duration. A total of three one-hour aeration test runs and at least one 15-minute backvent test run will be performed.

During aeration and backvent testing, EtO emissions at the inlet and the outlet of the catalytic oxidizer will be determined using direct source sample injection into the gas chromatograph (GC). All aeration and backvent testing will be performed using recently sterilized product.

Operation and documentation of process conditions will be performed by personnel from Sterigenics using existing monitoring instruments installed by the manufacturer on the equipment to be tested. In accordance with the procedures established in USEPA CFR40, Part 63, Subpart O, catalyst bed temperature will be recorded.

5.2 VOLUMETRIC FLOW MEASUREMENT

Exhaust gas flow at the outlet of the catalytic oxidizer and the scrubber will be determined by EPA Method 2C using a standard pitot tube and an inclined-oil manometer. Sampling ports will be located far enough from any flow disturbances to permit accurate flow measurement.

Temperature measurements will be obtained from a type K thermocouple and thermometer attached to the sampling probe. Exhaust gas composition will be assumed to be air and small amounts of water vapor. Water vapor will be negligible, at about 3 percent.

5.3 CONTROL EFFICIENCY AND MASS EMISSIONS MEASUREMENT

During aeration and backvent testing, EtO emissions at the inlet and outlet of the catalytic oxidizer will be determined using direct source sample injection into the GC. The mass of EtO emitted to the inlet and from the outlet will be determined using the equation shown below in Section 5.9. Mass-mass control-efficiency

of EtO during aeration and backvent^{testing} will be calculated by comparing the mass of EtO vented to the system inlet to the mass of EtO vented from the system outlet.

During aeration and backvent^{testing}, vented gas will be analyzed by an SRI, Model 8610, portable gas chromatograph (GC), equipped with the following: dual, heated sample loops and injectors; dual columns; and dual detectors. A flame ionization detector (FID) will be used to quantify inlet EtO emissions, and a photoionization detector (PID) will be used to quantify low-level EtO emissions at the emission-control device outlet.

5.4 SAMPLE TRANSPORT

Source gas will be pumped to the GC at approximately 500-1000 cubic centimeters per minute (cc/min) from the sampling ports through two lengths of Teflon® sample line, each with a nominal volume of approximately 75 cubic centimeters (cc) and an outer diameter of 0.25 inch. At the inlet of the catalytic oxidizer, the sampling port will be located in the plenum immediately upstream of the oxidizer catalyst bed. At the outlet of the catalytic oxidizer, sampling ports will be located in the exhaust stack downstream of the catalyst bed.

5.5 GC INJECTION

Source-gas samples will then be injected into the GC which will be equipped with two heated sampling loops, each containing a volume of approximately 2cc and maintained at 100 degrees Celsius (C). Injections will occur at approximately one-minute intervals during backvent testing, and at approximately five-minute intervals during aeration testing. Helium will be the carrier gas for both the FID and PID.

5.6 GC CONDITIONS

The packed columns for the GC will both be operated at 80 degrees C. The columns will be stainless steel, 6 feet long, 0.125 inch outer diameter, packed with 1 percent SP-1000 on 60/80 mesh Carbopack B.

During the analysis, the FID will be operated at 250 degrees C. The support gases for the FID will be hydrogen (99.995% pure) and air (99.9999% pure). Any unused sample gas will be vented from the GC system back to the inlet of the control device being tested.

5.7 CALIBRATION STANDARDS

The FID will be calibrated for mid-range part-per-million-by-volume (ppmv) level analysis using gas proportions similar to the following:

- 1) 100 ppmv EtO, balance nitrogen
- 2) 50 ppmv EtO, balance nitrogen (audit gas)
- 3) 10 ppmv EtO, balance nitrogen
- 4) 1 ppmv EtO, balance nitrogen

The PID will be calibrated for low-range ppmv level analysis using gas proportions similar to the following:

- 1) 100 ppmv EtO, balance nitrogen
- 2) 50 ppmv EtO, balance nitrogen (audit gas)
- 3) 10 ppmv EtO, balance nitrogen
- 4) 1 ppmv EtO, balance nitrogen

Each of these calibration standards will be in a separate, certified manufacturer's cylinder. Copies of the calibration gas laboratory certificates will be included with the final report.

5.8 SAMPLING DURATION

Since aeration is a 24-hour process at this facility, with constant discharge flow from the aeration chambers to the emission-control system, aeration testing will consist of three 1-hour test runs. Each test run will be performed with recently sterilized product in the aeration chambers. Backvent testing will consist of at least 15-minute test run, which encompasses the entire duration of the backvent process. Each test run will be performed with recently sterilized product in the respective sterilization chambers.

5.9

CONTROL-EFFICIENCY/MASS-EMISSIONS CALCULATIONS

Mass emissions of EtO during aeration will be calculated using the following equation:

$$\text{MassRate} = (\text{VolFlow})(\text{MolWt})(\text{ppmv EtO}/10^6)/(\text{MolVol})$$

Where:

- MassRate = EtO mass flow rate, pounds per minute
VolFlow = Corrected volumetric flow rate, standard cubic feet per minute at 68 degrees F
MolWt = 44.05 pounds EtO per pound mole
ppmv EtO = EtO concentration, parts per million by volume
 10^6 = Conversion factor, ppmv per "cubic foot per cubic foot"
MolVol = 385.32 cubic feet per pound mole at one atmosphere and 68 degrees F

Mass-mass control efficiency of EtO will be calculated for aeration and backvent. Results of the control-efficiency testing will be summarized in the final report..

6.0 TEST SCENARIO

The aeration and backvent testing will be performed during normal process load conditions. Three aeration test runs and ^{up to} three backvent test runs will be conducted in series to verify the performance of the emission-control device. The testing schedule is as follows:

- 1) Testing equipment is set up and calibrated.
- 2) Backvent Test Run #1 is conducted at the conclusion of the sterilization cycle of Sterilization Chamber 8, 9, 10, or 13. Sampling is performed at the inlet and the outlet of the catalytic oxidizer. Sterilized product is then transferred into aeration. Up to two additional backvent test runs may be performed dependent on the production schedules of Chambers 8, 9, 10, and 13.
- 3) Aeration Phase Test Run #1 is conducted with recently sterilized product in aeration. Sampling is performed at the inlet and the outlet of the catalytic oxidizer.
- 4) Aeration Phase Test Run #2 is conducted with recently sterilized product in aeration. Sampling is performed at the inlet and the outlet of the catalytic oxidizer.
- 5) Aeration Phase Test Run #3 is conducted with recently sterilized product in aeration. Sampling is performed at the inlet and the outlet of the catalytic oxidizer.
- 6) Post calibration check is performed, testing equipment is packed.

7.0 QA/QC

7.1 FIELD TESTING QUALITY ASSURANCE

At the beginning of the test, the sampling system will be leak checked at a vacuum of 15 inches of mercury. The sampling system will be considered leak free when the flow indicated by the rotameters falls to zero.

At the beginning of the test, a system blank will be analyzed to ensure that the sampling system is free of EtO. Ambient air will be introduced at the end of the heated sampling line and drawn through the sampling system line to the GC for analysis. The resulting chromatogram also will provide a background level for non-EtO components (i.e. ambient air, carbon dioxide, water vapor) which are present in the source gas stream due to the ambient dilution air which is drawn into the emission-control device, and due to the destruction of EtO by the emission-control device which produces carbon dioxide and water vapor. This chromatogram, designated AMB, will be included with the calibration data in the final report.

7.2 CALIBRATION PROCEDURES

The GC system will be calibrated at the beginning and conclusion of each day's testing. Using the Peaksimple II analytical software, a point-to-point calibration curve will be constructed for each detector. A gas cylinder of similar composition as the calibration gases, but certified by a separate supplier, will be used to verify calibration gas composition and GC performance.

All calibration gases and support gases used will be of the highest purity and quality available. A copy of the laboratory certification for each calibration gas will be included in the final report.

8.0 FINAL TEST REPORT DESCRIPTION

The test results will be summarized in a written report. This report will be submitted to NMED no later than 60 days after the conclusion of the field testing. It will include results for EtO control efficiency of the emission-control system and mass emissions of EtO to the atmosphere from the emission-control system outlet. The report will contain:

- Summary tables with comparisons of the test results to rule limits;
- Copies of all intermediate data tables and calculation worksheets;
- Copies of all GC chromatograms from calibration runs and sample injections; and
- Laboratory calibration certificates for all calibration gases and all applicable measurement instruments.



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October 20, 2013

OCT 23 2013

Director, Air Pesticides & Toxics
US EPA Region 6
1445 Ross Avenue
Dallas, Texas 75202-2733

Air/Toxics & Inspection
Coordination Branch
6EN-A

RE: 2nd Notification of Scheduled Emission System Performance Test
Sterigenics' Santa Teresa, New Mexico Facility
NSR Permit No: 0733-M15

Dear Sir:

Notification of our planned performance test of the catalytic oxidizer emission control system at our Santa Teresa, NM facility was sent to EPA Region 6 earlier this month, but was returned to us due to the federal government shutdown (see enclosed FedEx notice). Please be advised that the annual performance test will occur on December 4, 2013 at approximately 10 am. The facility is located at:

2400 Airport Road
Santa Teresa, NM 88008

This notification is being provided per 40 CFR 63.9(e). The annual oxidizer performance test is being done pursuant to 40 CFR 63.363(b)(4)(i). Enclosed is the test protocol for the performance test.

Please call Jeffrey Smith at (847) 263-3499 if you have any questions.

Sincerely,

Sue Reinhardt
EHS Manager

encl.

cc: Steve Ortiz, Santa Teresa Facility General Manager



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OCT - 2 2014

Toxics & Inspection
Coordination Branch
6EN-A

September 30, 2014

Director- Air, Pesticides & Toxics
US EPA Region VI
1445 Ross Avenue
Dallas, Texas 75202-2733

RE: Notification of Scheduled Emission System Performance Test
Sterigenics' Santa Teresa, New Mexico Facility
NSR Permit No: 0733-M15

Dear Sir:

Please be advised the annual performance test of the catalytic oxidizer emission control system at our Santa Teresa, NM facility will occur on December 3, 2014 at approximately 10 am. The facility is located at:

2400 Airport Road
Santa Teresa, NM 88008

This notification is being provided per 40 CFR 63.9(e). The annual oxidizer performance test is being done pursuant to 40 CFR 63.363(b)(4)(i).

Please call Mr. Jeffrey Smith at (847) 263-3499 if you have any questions.

Sincerely,

Kevin Wagner
Director EHS

cc: Steve Ortiz, Santa Teresa Facility General Manager



AI/AI/CO

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OCT - 2 2014

Toxics & Inspection
Coordination Branch
6EN-A

September 30, 2014

Director- Air, Pesticides & Toxics
US EPA Region VI
1445 Ross Avenue
Dallas, Texas 75202-2733

RE: Notification of Scheduled Emission System Performance Test
Sterigenics' Santa Teresa, New Mexico Facility
NSR Permit No: 0733-M15

Dear Sir:

Please be advised the annual performance test of the catalytic oxidizer emission control system at our Santa Teresa, NM facility will occur on December 3, 2014 at approximately 10 am. The facility is located at:

2400 Airport Road
Santa Teresa, NM 88008

This notification is being provided per 40 CFR 63.9(e). The annual oxidizer performance test is being done pursuant to 40 CFR 63.363(b)(4)(i).

Please call Mr. Jeffrey Smith at (847) 263-3499 if you have any questions.

Sincerely,

Kevin Wagner
Director EHS

cc: Steve Ortiz, Santa Teresa Facility General Manager



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January 29, 2007

Air, Pesticides and Toxics
Director
EPA Region VI
1445 Ross Avenue
Dallas, TX 75202-2733

RE: Summary Report - Excess Gaseous Emissions and Continuous Monitoring System Performance
Sterigenics Santa Teresa, NM Plant
July 1, 2006 to December 31, 2006

Dear Director:

As required by 40 CFR 63.366(a)(3), Sterigenics US, LLC is submitting this semi-annual excess emissions and continuous monitoring system summary report for our Santa Teresa, NM plant.

40 CFR 63.10(e)(3)(vii) states: "If the total duration of excess emissions or process or control system parameter exceedances for the reporting period is less than 1 percent of the total operating time for the reporting period, and CMS downtime for the reporting period is less than 5 percent of the total operating time for the reporting period, only the summary report shall be submitted, and the full excess emissions and continuous monitoring system performance report need not be submitted unless required by the Administrator".

As set forth in the above cited regulation, we are submitting this summary report for our Santa Teresa plant because:

1. The total duration of excess emissions and the process or control system parameter exceedances for the reporting period was zero (0) hours which is less than 1 percent of the total operating time for the reporting period, and
2. CMS downtime for the reporting period was zero (0) hours which is less than 5 percent of the total operating time for the reporting period.

Sterigenics US, LLC has reviewed all applicable provisions of the operating permit. The following information is submitted as required in §63.10(e)(3)(vi):

- (A) Company Name and Address of the Affected Source
Sterigenics US, LLC
2400 Airport Road
Santa Teresa, NM 88008
- (B) Identification of Hazardous Air Pollutant
Ethylene Oxide

- (C) Reporting Period Dates
Beginning: July 1, 2006
Ending: December 31, 2006

- (D) Description of Process Units
The facility process units are sterilization process chambers of various sizes using ethylene oxide gas as the sterilant. High concentration ethylene oxide process emissions are vented to an acid-water scrubber and low concentration ethylene oxide emissions are exhausted to a catalytic oxidizer abator.

- (E) Emission and Operating Parameter Limitations Specified in Relevant Standards

<u>Control Unit</u>	<u>Control Parameter</u>	<u>Limitations/Standards</u>
Abator	Catalytic bed temperature	Continuously monitor; >240°F
Scrubber	Scrubber tank liquid level	Record weekly

- (F) Monitoring Equipment Manufacturers and Model Numbers

<u>Monitoring Equipment</u>	<u>Model Number</u>	<u>Serial Number</u>
Honeywell Chart Recorder	Truline DR450T	8939760945047

- (G) Date of Latest CMS Certification or Audit
7/24/06 (Semi-Annual Calibration)

- (H) Total Operating Time of Affected Source during Reporting Period
Continuous, for a total of 4416 hours.

- (I) Emission Data Summary

<u>Control Unit</u>	<u>Total Duration of Excess Emissions</u>	<u>Excess Emission Duration as % of Total Hours</u>	<u>Excess Emission Duration by Cause</u>				
			<u>Startup/Shutdown</u>	<u>Control Equipment Problems</u>	<u>Process Problems</u>	<u>Other Known Causes</u>	<u>Other Unknown Causes</u>
Abator	0 hr	0%	0	0	0	0	0
Scrubber	0 hr	0%	0	0	0	0	0

(J) CMS Performance Summary

<u>CMS Unit</u>	<u>Total CMS Downtime</u>	<u>Total CMS Downtime as % of Total Hours</u>	<u>CMS Downtime by Cause (hours)</u>				
			<u>Monitoring Equipment Malfunctions</u>	<u>Nonmonitoring Equipment Malfunctions</u>	<u>Quality Control Calibrations</u>	<u>Other Known Causes</u>	<u>Other Unknown Causes</u>
Honeywell Chart Recorder	0 hr	0%	0	0	0	0	0

(K) Description of Changes in CMS, Processes or Controls since Last Reporting Period
None.

(L) Responsible Official Certification
Based on the information and belief formed after reasonable inquiry, the statements and information in this report are true, accurate, and complete.

Kathleen Hoffman

Kathleen Hoffman
Vice President – RA/QA

(M) Date of Report
January 26, 2007

If you have any questions regarding this report, please call Arlene Farrar at (630) 928-1771 or AFarrar@Sterigenics.com.

Sincerely,

Kathleen Hoffman

Kathleen Hoffman
Vice President – RA/QA

Cc: Ms. Mary Uhl
Bureau Chief
State of New Mexico, Environment Department
Air Quality Bureau
2048 Galisteo St.
Santa Fe, NM 87505



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JUL 30 2007

Air/Toxics & Inspection
Coordination Branch
RPNLA

July 24, 2007

Air, Pesticides and Toxics
Director
EPA Region VI
1445 Ross Avenue
Dallas, TX 75202-2733

RE: Summary Report - Excess Gaseous Emissions and Continuous Monitoring System Performance

Sterigenics Santa Teresa, NM Plant
January 1, 2007 to June 30, 2007

Dear Director:

As required by 40 CFR 63.366(a)(3), Sterigenics US, LLC is submitting this semi-annual excess emissions and continuous monitoring system summary report for our Santa Teresa, NM plant.

40 CFR 63.10(e)(3)(vii) states: "If the total duration of excess emissions or process or control system parameter exceedances for the reporting period is less than 1 percent of the total operating time for the reporting period, and CMS downtime for the reporting period is less than 5 percent of the total operating time for the reporting period, only the summary report shall be submitted, and the full excess emissions and continuous monitoring system performance report need not be submitted unless required by the Administrator".

As set forth in the above cited regulation, we are submitting this summary report for our Santa Teresa plant because:

1. The total duration of excess emissions and the process or control system parameter exceedances for the reporting period was twelve (12) hours which is less than 1 percent of the total operating time for the reporting period, and
2. CMS downtime for the reporting period was zero (0) hours, which is less than 5 percent of the total operating time for the reporting period.

Sterigenics US, LLC has reviewed all applicable provisions of the operating permit. The following information is submitted as required in §63.10(e)(3)(vi):

- (A) Company Name and Address of the Affected Source
Sterigenics US, LLC
2400 Airport Road
Santa Teresa, NM 88008
- (B) Identification of Hazardous Air Pollutant
Ethylene Oxide



© Reporting Period Dates

Beginning: January 1, 2007

Ending: June 30, 2007

(D) Description of Process Units

The facility process units are sterilization process chambers of various sizes using ethylene oxide gas as the sterilant. High concentration ethylene oxide process emissions are vented to an acid-water scrubber and low concentration ethylene oxide emissions are exhausted to a catalytic oxidizer abator.

(E) Emission and Operating Parameter Limitations Specified in Relevant Standards

<u>Control Unit</u>	<u>Control Parameter</u>	<u>Limitations/Standards</u>
Abator	Catalytic bed temperature	Continuously monitor; >240°F
Scrubber	Scrubber tank liquid level	Record weekly

(F) Monitoring Equipment Manufacturers and Model Numbers

<u>Monitoring Equipment</u>	<u>Model Number</u>	<u>Serial Number</u>
Honeywell Chart Recorder	Truline DR450T	8939760945047

(G) Date of Latest CMS Certification or Audit

1/29/07 (Semi-Annual Calibration)

(H) Total Operating Time of Affected Source during Reporting Period

Continuous, for a total of 4416 hours.

(I) Emission Data Summary

<u>Control Unit</u>	<u>Total Duration of Excess Emissions</u>	<u>Excess Emission Duration as % of Total Hours</u>	<u>Excess Emission Duration by Cause</u>				
			<u>Startup/Shutdown</u>	<u>Control Equipment Problems</u>	<u>Process Problems</u>	<u>Other Known Causes</u>	<u>Other Unknown Causes</u>
Abator	12 hr	0.3%	0	12 hrs ¹	0	0	0
Scrubber	0 hr	0%	0	0	0	0	0

¹ On 6-28-07 the abator experienced a 12 hour time period when the temperature dropped below 240F periodically due to start up after a power glitch. The abator recorded a temperature of 238F intermittently over a 12 hour period. The excess emissions were minimal.



(J) CMS Performance Summary

<u>CMS Unit</u>	<u>Total CMS Downtime</u>	<u>Total CMS Downtime as % of Total Hours</u>	<u>CMS Downtime by Cause (hours)</u>				
			<u>Monitoring Equipment Malfunctions</u>	<u>Nonmonitoring Equipment Malfunctions</u>	<u>Quality Control Calibrations</u>	<u>Other Known Causes</u>	<u>Other Unknown Causes</u>
Honeywell Chart Recorder	0 hr	0%	0	0	0	0	0

(K) Description of Changes in CMS, Processes or Controls since Last Reporting Period
None.

(L) Responsible Official Certification
Based on the information and belief formed after reasonable inquiry, the statements and information in this report are true, accurate, and complete.

KA Hoffman

Kathleen Hoffman
Vice President – RA/QA

(M) Date of Report
July 24, 2007

If you have any questions regarding this report, please call Kathleen Hoffman at (630) 928-1758 or KHoffman@Sterigenics.com.

Sincerely,

KA Hoffman

Kathleen Hoffman
Vice President – RA/QA

Cc: Ms. Mary Uhl
Bureau Chief
State of New Mexico, Environment Department
Air Quality Bureau
2048 Galisteo St.
Santa Fe, NM 87505



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AI/AI/CJ

NS91

V2

July 28 2006

Director, Air, Pesticides and Toxics

EPA Region VI
1445 Ross Avenue
Dallas, TX 75202-2733

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AUG 1 2006

Air/Toxics & Inspection
Coordination Branch
6EN-A

RE: Summary Report

**Excess Gaseous Emissions and Continuous Monitoring System Performance
Sterigenics US, LLC - Santa Teresa, NM Plant**

Dear Director:

As required by 40 CFR 63.366(a)(3), Sterigenics US, LLC is submitting this semi-annual excess emissions and continuous monitoring system summary report for our Santa Teresa, NM plant.

40 CFR 63.10(e)(3)(vii) states: "If the total duration of excess emissions or process or control system parameter exceedances for the reporting period is less than 1 percent of the total operating time for the reporting period, and CMS downtime for the reporting period is less than 5 percent of the total operating time for the reporting period, only the summary report shall be submitted, and the full excess emissions and continuous monitoring system performance report need not be submitted unless required by the Administrator".

As set forth in the above cited regulation, we are submitting this summary report for our Santa Teresa plant because:

1. The total duration of excess emissions and the process or control system parameter exceedances for the reporting period was zero (0) hours which is less than 1 percent of the total operating time for the reporting period, and
2. CMS downtime for the reporting period was zero (0) hours which is less than 5 percent of the total operating time for the reporting period.

Sterigenics US, LLC has reviewed all applicable provisions of the operating permit. The following information is submitted as required in §63.10(e)(3)(vi):

(A) Company Name and Address of the Affected Source

Sterigenics US, LLC
2400 Airport Road
Santa Teresa, NM 88008

(B) Identification of Hazardous Air Pollutant

Ethylene Oxide

(C) Reporting Period Dates

Beginning: January 1, 2006
Ending: June 30, 2006

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Air/Toxics & Inspection
Coordination Branch
6EN-A

(D) Description of Process Units

The facility process units are sterilization process chambers of various sizes using ethylene oxide gas as the sterilant. High concentration ethylene oxide process emissions are vented to an acid-water scrubber and low concentration ethylene oxide emissions are exhausted to a catalytic oxidizer abator.

(E) Emission and Operating Parameter Limitations Specified in Relevant Standards

<u>Control Unit</u>	<u>Control Parameter</u>	<u>Limitations/Standards</u>
Abator	Catalytic bed temperature	Continuously monitor; must be greater than 240°F
Scrubber	Scrubber tank liquid level	Record weekly
Scrubber	Scrubber glycol solution pH	Record weekly; must be less than 2

(F) Monitoring Equipment Manufacturers and Model Numbers

<u>Monitoring Equipment</u>	<u>Model Number</u>	<u>Serial Number</u>
Honeywell Chart Recorder	Truline DR450T	N/A

(G) Date of Latest CMS Certification or Audit
1/4/06 (Semi-Annual Calibration)

(H) Total Operating Time of Affected Source during Reporting Period
Continuous.

(I) Emission Data Summary

<u>Control Unit</u>	<u>Total Duration of Excess Emissions</u>	<u>Excess Emission Duration as % of Total Hours</u>	<u>Excess Emission Duration by Cause</u>				
			<u>Startup/Shutdown</u>	<u>Control Equipment Problems</u>	<u>Process Problems</u>	<u>Other Known Causes</u>	<u>Other Unknown Causes</u>
Abator	0 hr	0%	0	0	0	0	0
Scrubber	0 hr	0%	0	0	0	0	0

(J) CMS Performance Summary

<u>CMS Unit</u>	<u>Total CMS Downtime</u>	<u>Total CMS Downtime as % of Total Hours</u>	<u>CMS Downtime by Cause</u>				
			<u>Monitoring Equipment Malfunc-tions</u>	<u>Nonmoni-toring Equipment Malfunc-tions</u>	<u>Quality Control Calibra-tions</u>	<u>Other Known Causes</u>	<u>Other Unknown Causes</u>
Honeywell Chart Recorder	0 hr	0%	0	0	0	0	0

(K) Description of Changes in CMS, Processes or Controls since Last Reporting Period
None.

(L) Responsible Official Certification

Based on the information and belief formed after reasonable inquiry, the statements and information in this report are true, accurate, and complete.

KATHLEEN HOFFMAN

Kathleen Hoffman
Vice President – RA/QA

(M) Date of Report
July 28, 2006

If you have any questions regarding this report, please call Rosey Liu at (323) 586-9060.

Sincerely,

KATHLEEN HOFFMAN

Kathleen Hoffman
Vice President – RA/QA



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AI/AI/CJ

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July 28 2006

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AUG 1 2006

Air/Toxics & Inspection
Coordination Branch
6EN-A

Director, Air, Pesticides and Toxics

EPA Region VI
1445 Ross Avenue
Dallas, TX 75202-2733**RE: Summary Report****Excess Gaseous Emissions and Continuous Monitoring System Performance
Sterigenics US, LLC - Santa Teresa, NM Plant**

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As set forth in the above cited regulation, we are submitting this summary report for our Santa Teresa plant because:

1. The total duration of excess emissions and the process or control system parameter exceedances for the reporting period was zero (0) hours which is less than 1 percent of the total operating time for the reporting period, and
2. CMS downtime for the reporting period was zero (0) hours which is less than 5 percent of the total operating time for the reporting period.

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Ethylene Oxide

(C) Reporting Period DatesBeginning: January 1, 2006
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RECEIVE

AUG 1 2006

Air/Toxics & Inspection
Coordination Branch
6EN-A

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Honeywell Chart Recorder	Truline DR450T	N/A

(G) Date of Latest CMS Certification or Audit
1/4/06 (Semi-Annual Calibration)

(H) Total Operating Time of Affected Source during Reporting Period
Continuous.

(I) Emission Data Summary

<u>Control Unit</u>	<u>Total Duration of Excess Emissions</u>	<u>Excess Emission Duration as % of Total Hours</u>	<u>Excess Emission Duration by Cause</u>				
			<u>Startup/Shutdown</u>	<u>Control Equipment Problems</u>	<u>Process Problems</u>	<u>Other Known Causes</u>	<u>Other Unknown Causes</u>
Abator	0 hr	0%	0	0	0	0	0
Scrubber	0 hr	0%	0	0	0	0	0

(J) CMS Performance Summary

<u>CMS Unit</u>	<u>Total CMS Downtime</u>	<u>Total CMS Downtime as % of Total Hours</u>	<u>CMS Downtime by Cause</u>				
			<u>Monitoring Equipment Malfunc-tions</u>	<u>Nonmoni-toring Equipment Malfunc-tions</u>	<u>Quality Control Calibra-tions</u>	<u>Other Known Causes</u>	<u>Other Unknown Causes</u>
Honeywell Chart Recorder	0 hr	0%	0	0	0	0	0

(K) Description of Changes in CMS, Processes or Controls since Last Reporting Period
None.

(L) Responsible Official Certification

Based on the information and belief formed after reasonable inquiry, the statements and information in this report are true, accurate, and complete.

KATHLEEN HOFFMAN

Kathleen Hoffman
Vice President – RA/QA

(M) Date of Report
July 28, 2006

If you have any questions regarding this report, please call Rosey Liu at (323) 586-9060.

Sincerely,

KATHLEEN HOFFMAN

Kathleen Hoffman
Vice President – RA/QA